FOOD DESERTED: RACE, POVERTY, AND FOOD VULNERABILITY IN ATLANTA, 1980 - 2010

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FOOD DESERTED: RACE, POVERTY, AND FOOD VULNERABILITY IN ATLANTA, 1980 - 2010

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SUMMARY

The concept of food deserts, as a measure of low-income neighborhoods with limited access to affordable and healthy produce, can be helpful as a tool to quantify and compare food vulnerabilities, as many recent studies have demonstrated. However, the term masks the role that systems of racism and capitalism have played in producing food vulnerabilities. To explore this gap in the literature, this dissertation addresses two central research questions. The first central research question asks, what are the influential demographic and spatial patterns that have shaped supermarket access in low-income neighborhoods across Atlanta from 1980 to 2010? This study addresses this question using geo-spatial and quantitative analytical methods. The second research question asks, how have the movement of capital, the influence of urban political regimes, and community-based organizations shaped food environments in historically black neighborhoods in Atlanta from 1980 to 2010? These relationships are explored through a qualitative analysis of community redevelopment plans for two case study neighborhoods. The study reveals several findings. First, race, poverty, and population density spatially overlap with shifts in Atlanta's supermarket locations. Atlanta has a clear racial and income dividing line that splits the city into higher-income and majority white neighborhoods to the north and low-income/poor and majority black neighborhoods to the south, which has intensified over the thirty-year study period. Second, racial segregation and the concentration of poverty reinforce the vulnerability experienced by low-income neighborhoods, and produces limited access to supermarkets and other neighborhood retail outlets. Third, even though neighborhood redevelopment plans contained resident's concerns about limited supermarket access, the plans' visions

often required both the public sector and private investment. Fourth, the concept of food deserts is too limited. Instead, a new conceptual understanding is needed to identify processes and structures that have produced whole communities of people that have been *food deserted*.

CHAPTER 1

INTRODUCTION

Supermarkets are far more than places to purchase food; they are also indicators of the vitality and resilience of a neighborhood, of the capacity and ability of a community to sustain itself both through adequate nutrition and through economic activity. For millions of Americans, especially low-income and people of color, access to grocery stores that sell fresh fruit and vegetables is virtually non-existent. For the people living in these neighborhoods, often described as 'food deserts,' residents may have to travel miles outside their neighborhood to buy produce. This limited access to fresh fruit and vegetables has a direct implication for the health and well being of community members.

The term 'food deserts' refers to geographic areas (measured as United States Census tracts), especially economically poor areas, where residents lack the availability of, and access to, fresh fruit and vegetables sold at supermarkets and grocery stores (USDA 2009). In recent years, the United States Department of Agriculture (USDA), academic research, and analysis by urban planners and community development groups have published research that helps us understand the characteristics and implications of food deserts. The literature has solidified three key ideas: food deserts describe low-income and poor neighborhoods that are typically non-white, they exist in both rural and urban settings, and they refer to a neighborhood's geographic proximity to a grocery store and supermarket. According to the USDA, an urban neighborhood is designated as a food desert when it is more than one mile away from a supermarket.

In an effort to add to this body of research and fill in some gaps to our knowledge, this study will provide an analysis of food deserts in the Atlanta, Georgia. Specifically, this research will investigate how food deserts have developed across Atlanta from 1980 to 2010, how demographic and economic factors contributed to this development, and how the market, the state, and community groups have shaped this unfolding. At the core of this investigation is an interrogation of the term 'food deserts' itself. That is, what this research ultimately concludes is that food deserts are not only about neighborhoods that are void of supermarkets or grocery stores but that their barren landscape is also indicative of larger processes of systemic disinvestment in poor and people of color neighborhoods. In doing so, this research proposes that the concept of food deserts, as a concept that deals specifically with the characteristics of geographic space and the built environment in the form of supermarkets, be cast aside in favor of another concept. I conclude that the dearth of supermarkets in low-income and people of color neighborhoods can best be understood through the lens of the "food *deserted*." This term better orients our thinking to understand how systemic systems of inequality, racism and capitalism specifically, produce food vulnerabilities for specific people. In short, it refocuses our gaze on the people who experience food vulnerability no matter where they live and allows us to better assess solutions to the food desert problem. The purpose of this dissertation is to thoroughly describe the findings and analysis of the development of food deserts in Atlanta from 1980 to 2010 that empirically support this set of conclusions.

This introductory chapter is divided into six sections. The first section contains background information of the problem by describing food deserts and is followed by a second section that describes the problems and limitations of the food desert concept.

This is followed by the rationale for the study followed by a brief description of the theoretical framework I use to structure the conceptual and methodological direction of this study. The fifth section outlines the precise research questions to be addressed, and a sixth section on the methods used in this dissertation project follows. The seventh and eighth sections provide an outline of the chapters contained in this study and define the key terms used, respectively.

Background: Defining Food Deserts

Put simply, food deserts are urban or rural neighborhoods that lack access to fresh, healthy, and affordable food. Instead of grocery stores or supermarkets, these neighborhoods may have no access to fresh produce nearby or may be served predominantly by fast food restaurants or convenience stores that offer limited healthy and affordable food options. According to the USDA, Department of Treasury, and the Department of Health and Human Services, a food desert is defined "as a census tract with a substantial share of residents who live in low-income areas that have low levels of access to a grocery store or healthy, affordable food retail outlet" (USDA 2014). Low-income communities are subsequently defined as a tract with a poverty rate of 20 percent or greater or a median family income at or below 80 percent of the area median family income. Additionally, 'low-access' for urban areas indicates that at least 33 percent of the tract's population lives more than one mile away from a supermarket or large grocery store.

Since the late 1990s, the term 'food desert' – first used by a public housing resident in Scotland to describe his experience of trying to get fresh produce near his

home where no grocery stores were available (Cummins and Macintyre 2002) – has been increasingly employed within academic, policy, and community-development circles.[1] Most of the current body of literature on food deserts has confirmed and described the existence of food deserts in both rural and urban areas and traced their major characteristics (Ashman et. al.1993; Bitler and Haider 2011; Beaulac et. al. 2009; Larsen and Gilliland 2008). Powell et al.'s (2007) research links socioeconomic factors and food store availability and suggests that poor neighborhoods typically have 25 percent fewer supermarkets than middle-income neighborhoods, a pattern that has been confirmed elsewhere (Alwitt and Donley 1997; Morland et al. 2002; Moore and Diez-Roux 2006). Other studies have focused on the food options available to residents in poor neighborhoods and have found that they typically have fewer healthy and fresh food choices when compared to non-poor neighborhoods (Lewis et al. 2005; Glanz et al. 2007). In particular, predominantly black neighborhoods have been shown to have fewer supermarkets, more fast-food restaurants (Block, Scribner, and DeSalvo 2004), and more non-chain grocery stores that offer poorer quality foods (Block and Kouba 2006; Moore and Diez-Roux 2006; Morland and Filomena 2007; Raja et al. 2008). In contrast, Zenk et al. (2005) found that supermarket access is linked more closely with class status than race and concluded that food store availability was similar among neighborhoods of the same class but with different ethnic or racial makeup. In sum, this body of literature has

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[1] The phrase was then used in a British government report from the Low Income Project Team of the Nutrition Task Force in 1995 to describe how low-income residents had limited access to fresh produce (Beaumont et al. 1995). Three years later, the former chairman of an investigative committee on the

established ‘food deserts’ as a legitimate subject to study and one that is intricately connected to questions of power and inequality.

Other studies have gone further in order to understand the how the *type* of food retail outlets shapes access to food. Overall, studies have shown that the poor have less access to supermarket chains in particular (defined as an annual sales volume of more than $2 million or more than 50 employees) (Chung and Myers 1999; Glanz et al. 2007). The U.S. Department of Agriculture’s 2009 study of food deserts on a national scale determined that 23.5 million people cannot access a supermarket within a mile of their home (USDA Economic Research Service 2009). Proximity to a grocery store has significant implications for fresh fruit and vegetable access. The implication for this limited access is that residents of low-income neighborhoods pay 10 - 40 percent more for food items (Chung and Myers 1999; Glanz et al., 2007). Adults who live more than a mile from a supermarket are 25 - 46 percent less likely to have a healthy diet[2] than those who live close to a supermarket (Moore, Roux, Nettleton, and Jacobs 2008). Ultimately, access to a supermarket matters because most Americans shop for food at these types of stores (Economic Research Service 2013) and because supermarkets “more consistently offer a good variety and selection of affordable and nutritious food” (Treuhaft and Karpyn 2010: 22; Kaufman 1999). These studies have demonstrated that poverty and low-income areas, and majority people of color neighborhoods, are less likely to have access to a supermarket chain store. Yet, for all of the insight that this emerging body of

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[2] A healthy diet is defined in this study as the consumption of foods that are correlated with a low risk of chronic disease and low in fats and processed meats.

research has provided on the subject of food deserts, the conceptual usefulness of food deserts is still under scrutiny.

Statement of the Problem: Gaps in Food Desert Literature

The definition of food desert includes elements that point to very complex and historical processes. For example, by definition, a neighborhood qualifies as a 'food desert' if it has a poverty rate of 20 percent or greater or a median family income at or below 80 percent of the area median family income (USDA 2009). Poverty and median family income are factors that must be understood within a historical context of race, employment patterns, deindustrialization, and segregation. Sociologist Robert Bullard (2007), and others studying interdisciplinary approaches, have demonstrated that poverty and class are intimately tied to race and segregation (Massey 1990). Similarly, the definition of food desert that defines low-access as a tract's population living more than one mile from a supermarket or large grocery store also must be understood within a broader context. Several factors influence the presence or absence of large retail establishments in a neighborhood, including demographic and economic profiles of residents and the determination of developers and retail stores that the site is indeed profitable. As Massey (1990) points out, neighborhood retail environments are directly linked to the economic vitality of the neighborhood, which are in turn linked to factors of race and poverty. Simply put, impoverished and racially segregated neighborhoods most typically do not have (and cannot sustain) vibrant commercial and retail nodes. Therefore, the food desert definition can have the undesirable consequence of masking this important historical context.

This shortcoming is most evident when the food desert concept is applied to a specific locale, for example, in the City of Atlanta. Studying the development of food deserts in Atlanta poses its own set of challenges, particularly as it relates to the city's own unique racial make-up and geographies. Bullard's (2007) research affirms the necessity of an interdisciplinary perspective for understanding how race, class, and space shape our cities, including access to food in Atlanta. In order to understand why Atlanta is segregated into pockets of food deserts and non-food deserts, we have to look at race, racial segregation, and the laws and policies that influence racial dynamics in both subtle and overt ways. Ignoring race misses so much of how Atlanta came to be the city that it is today, and it leaves too much explanatory power to pure economic theories of change. The city is in constant production and negotiation; it is being remade to varying degrees by stakeholders with political influence, investment capital, and the collective power of people exercising their political will. These negotiations have always been intricately linked to race since Atlanta's founding as the railroad capital of the plantation-economy south.

When applied to Atlanta, the concept of food deserts falls short by treating poverty and neighborhood-level economic disinvestment as static and ahistorical elements. Atlanta is a city built on the foundation of racial segregation. Zoning legislation passed by white leaders in the 1920s facilitated segregation by classifying land use, building types, and tenant categories for particular neighborhoods based on race (Bayor 1996: 54). Blacks were systematically "given less land than whites for residential dwellings, and a number of their neighborhoods were classified as industrial" (Bayor 1996: 55). Racial integration of neighborhoods was prevented by legal restrictions,

redlining practices, clustering of public housing projects, industrial development, and the construction of "highways and roads [that] were used as barriers and boundaries to hold the black community in certain areas" (Bayor 1996: 55). By the 1960s, racial segregation was fully entrenched in all aspects of Atlanta's built, social, economic, and political environment. By 1959, blacks represented 35.7 percent of the city's population but were confined to just 16.4 percent of the land (Bayor 1996). From the Progressive Era and well into the 1960s, black neighborhoods lacked "parks, decent schools and housing, recreational facilities, libraries, and city services such as paved streets and regular garbage collection" (Bayor 1996: 132). Throughout the 1970s, much of Atlanta's metropolitan growth occurred in the northern white suburbs of Gwinnett County (95 percent white), Cobb County (96 percent white), and the suburban section of north Fulton County (99 percent white) (Kruse 2005: 245). In addition, the economic vitality of Atlanta's inner city fell far below that of majority-white suburban areas to the north. Between 1963 and 1972, Atlanta's "share of retail sales in the metropolitan area fell from 66 to 44 percent," with the central business district – once the economic center – capturing only 7 percent (Kruse 2005: 243). The concept of food deserts, by relying only on categorizations of present conditions without any consideration for the processes and systems that produced them, misses this important historical context.

The aim of this research is to learn more about the historical dimension of food deserts in the context of Atlanta, GA. This research will contribute to the current body of literature in three important ways. First, this study is interested in change over time, and importantly, the historically situated social, political, and economic factors related to this change. This orientation to the research uses a socio-historical lens to understand factors

such as power, agency, and inequality in the development of food deserts over time. Second, this research will further our understanding of the development of food deserts in the City of Atlanta, the South's major business and transportation hub. While there have been broad studies on food store access in Atlanta (Atlanta Regional Commission 2010), no detailed case studies of Atlanta neighborhoods have been published to date. Finally, this study merges quantitative and qualitative analysis in a mixed-method approach. Few studies have taken this methodological approach and the benefits and challenges of using this approach for studying food access issues will be documented.

Rationale for Study

What we eat and how we obtain it is related to a variety of social factors including where we live, our socio-economic class, cultural preferences, race, access to transportation, and many others. These factors influence and shape access to grocery and supermarket retail stores that sell fresh produce and ultimately produce different experiences of food access and vulnerability. To better understand Atlanta's food deserts and its food deserted (the people who live in them) it is necessary to explore key social, political, and economic variables that have shaped the urban landscape into pockets of abundance and deprivation. This research contributes to the emerging literature by using a socio-historical approach to identify key patterns of food desert development. A socio-historical analysis of food deserts in Atlanta is important because a historical look at the processes of political economy, the flow and movement of capital investment, and the structure of the food retail industry makes it possible to uncover the key norms, values, and rules that have shaped the spatial distribution of supermarkets in Atlanta. In turn, this

understanding provides important insight into the factors involved in the development of food deserts over time.

Theoretical Framework

There are two theoretical assumptions that this work stands upon. First, contrary to what economists may argue, supermarkets are not the sole domain of the market economy. That is, supermarkets make decisions about where to locate based on considerations of demographic variables, neighborhood conditions, and speculations about future conditions that consider more than economic variables. Therefore, although supermarkets may primarily operate in the market sphere, their decisions are also shaped by social and political considerations. Second, the extent to which outside factors and actors shape supermarket locations depends upon the degree of power and influence they have. Unlike pluralists notions of power that argue that all sectors have equal power and representation, or power-elite models that suggest that one group completely dominates a subordinate group, this research begins from a more complex understanding of power most adequately developed by Stephen Lukes (2005). In Lukes' assessment of power, unequal power relations manifest as explicit decisions on issues over which there is observable conflict, as a person or group shapes the agenda and menu of options that furthers their interests, and when a powerful group creates conditions where those less powerful behave in ways contrary to their interests (2005: 27).

These two fundamental assumptions provide the conceptual space to approach the subject of food deserts and the food deserted from a new perspective. In particular, the perspective I believe will help fill the gap in the food desert literature draws on the theoretical perspective of urban political economy. Political economists stress that a focus

on how political decisions are made – and how the connection between public and private interests are maintained – influence the construction of the city's built environment. Political leaders, can accept, reject, or negotiate where supermarkets open or close in a variety of ways. From the political economy lens, this study investigates the interplay between supermarket development, the concentration of poverty, and Atlanta's unique experience with racial residential segregation.

Research Questions

This dissertation answers two central research questions. The first question asks, what are the influential demographic and spatial patterns that have shaped supermarket access in low-income neighborhoods across Atlanta from 1980 to 2010? This is answered more pointedly through four subsequent research questions. First, what are the spatial characteristics of food deserts in Atlanta in 1980 and 2010? Second, what influential factors distinguish food desert census tracts from low-income census tracts? Third, how have food desert tracts and non-food desert tracts changed over time from 1980 to 2010? Fourth, what demographic factors are most influential in determining whether a low-income neighborhood is also a food desert? The quantitative methods used to answer this question are geo-spatial analysis, descriptive statistics, and inferential statistics.

The second research question asks, how have the movement of capital, the influence of urban political regimes, and community-based organizations shaped food environments in historically black neighborhoods in Atlanta from 1980 to 2010? This question is answered through three sub-questions. First, how have supermarkets and developers influenced supermarket development? Second, how have the City of Atlanta, the Atlanta Housing Authority, and the Atlanta Development Authority interacted with

market actors in the development of supermarkets? Finally, how have community residents influenced plans to shape the redevelopment vision and include access to supermarkets? To answer these questions, I use qualitative case study analysis of redevelopment plans from two historically black neighborhoods: the Old Fourth Ward and Pittsburgh. The case studies will focus on the causal mechanisms, decision points, and processes that are part of how food deserts and the food deserted are created.

Methods

Various methodological tools have been used to better understand the characteristics and impact of food deserts in the United States. Some studies have used surveys and questionnaires to understand the local impact of limited food store availability on individuals and their consumption habits (Chung and Myers 1999; Block and Kouba 2006; Inagami et al. 2006). Other studies have relied on interviews with consumers (Rose and Richards 2004) or focus groups with community stakeholders (Hendrickson, Smith, and Eikenberry 2006). A significant amount of studies rely on geographic information systems (GIS) and software to illustrate the spatial relationship between food store availability, neighborhood characteristics and demographic indicators (Block et al., 2004; Zenk et al., 2005; Gallagher 2007; Raja et al., 2008; Schafft, Jensen, and Hinrichs 2009). These studies rely predominantly on food store data from business directories, industry databases, and census records.

The first research question investigates the influential demographic and spatial patterns that have shaped supermarket access in low-income neighborhoods across Atlanta from 1980 to 2010. Similar to previous studies, I use geo-spatial analysis, descriptive statistics, and inferential statistics to answer this question. The geographic

scale I use to define a neighborhood is a United States census tract within the political boundaries of the City of Atlanta. A census tract is a "small, relatively permanent subdivision of a county that generally contains between 1,000 and 8,000 people, with an optimum size of 4,000 people" (Economic Research Service 2013). In keeping with the USDA's food desert definition of food access, supermarkets and large grocery stores with more than $2 million in annual sales (adjusted for inflation) are used as a proxy for sources of healthy and affordable foods. Low-income is defined as a census tract with either a poverty rate of 20 percent or higher, or a median family income at or below 80 percent of the area's median family income (Economic Research Service 2013). Low-access is where at least 33 percent of the census tract's population resides more than one mile from a supermarket or large grocery store (Economic Research Service 2013). I use the USDA definition for food deserts to provide a comparison between 1980 and 2010 data. Additionally, I use descriptive statistics to compare demographic and economic variables of food desert tracts to those of non-food desert tracts. These methods are used to produce an assortment of maps that use spatial analysis, such as spatial clustering and distributions, to demonstrate the changing locations of supermarkets over time. The logit regression is used to examine the influence of different factors in shaping the location of supermarkets.

The second research question asks how the movement of capital, the influence of urban political regimes, and the advocacy of community-based organizations shaped food environments in historically black neighborhoods in Atlanta from 1980 to 2010. I use case study analysis of two Atlanta urban neighborhoods, Old Fourth Ward and Pittsburgh, to answer this question. Case studies allow the researcher to study the

phenomenon, food deserts, "within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin 2009: 18). For this study, the case study approach is ideal because the phenomenon of food deserts is so intricately tied to the context of racial segregation, poverty, and neighborhood economic conditions. Additionally, the case study method is ideal for this research question because it is flexible enough to attend to multiple variables as determined by the theoretical orientation.

In this research design, the case study neighborhoods of Pittsburgh and the Old Fourth Ward share a common set of characteristics. Both neighborhoods had a majority black residential population in 1980; each neighborhood has mixed land use including residential, commercial, and retail use; both are adjacent to the downtown area (Pittsburgh is southwest of the city, Old Fourth Ward is east); both are located on Atlanta's Beltline redevelopment project, and both are situated within one mile of a major highway; and both have active neighborhood associations, community-based groups, and neighborhood planning units, as well as city council representation. In contrast, the major difference between these neighborhoods is their food desert designation. In 2010, The Old Fourth Ward had three chain supermarkets, one farmers market, and one productive urban farm with an active community supported agriculture distribution network. Unlike the Old Fourth Ward, the Pittsburgh neighborhood had access to no major supermarket chains and no farmers market.

One notable difference in the long-term trends each neighborhood has experienced over time is redevelopment and the infusion of new capital. The Old Fourth Ward has seen an influx of capital during the 2000s that brought new condos, restaurants,

boutiques, and retail space (Rhone 2007: 1FE). These efforts have successfully redeveloped old railway lines and industrial buildings into market rate residential and commercial space. Before the housing market failed, affluent residents began moving into the Old Fourth Ward and some homes sold for $900,000, a consequence of the neighborhood's gentrification (Emerson 2007: 3L). By 2007, three million square feet of the neighborhood's residential and commercial property was under redevelopment by developers, and many poor and black residents were being displaced (Emerson 2007: 3L). In stark contrast, throughout the 2000s Pittsburgh had been dealing with investors in a different way and has been notably unsuccessful in redeveloping abandoned factory buildings and rail lines. In 2005, the district's state representative, Dough Dean (D-Atlanta), waged a fight against investors who were buying homes in Pittsburgh and using them solely as rental property. Dean was concerned with the rise in rental properties in in-town communities because they prevented the "kind of people who want to buy a house and put down roots and invest in building a community" from moving in (Pendered 2005: 1JN). The concentration of abandoned houses, a weak tax base, high crime rates, and inflexible lenders stymied neighborhood initiatives led by community housing development organizations (Grantham and Trubey 2012: 1A). Therefore, the Old Fourth Ward and Pittsburgh have experienced capital investment and redevelopment initiatives in completely different ways.

Given the set of conditions these neighborhoods share, and the characteristics of neighborhoods identified in the food desert literature, it is likely that the Old Fourth Ward and Pittsburgh neighborhood would be designated as food deserts. Yet, while Pittsburgh met that designation in 2010, the Old Fourth Ward did not. Therefore, the focus of this

comparative case study is to find out why – what unique conditions and patterns – have produced the theoretical anomaly of the Old Fourth Ward. In identifying these two neighborhoods as case-study sites, I attempt to better understand the complex phenomenon of food deserts in urban areas and to clarify the assumptions of the theoretical framework I employ.

This case study analysis will evaluate redevelopment plans from the City of Atlanta that include the case study sites, neighborhood-based redevelopment plans, and news accounts of local neighborhood redevelopment initiatives. This data will be analyzed for the presence and characteristics of market actors, state actors, and community-based actors. For market actors, this includes investigating developers and supermarket chains and how they have located across different neighborhoods in Atlanta and in the neighborhoods of Pittsburgh and the Old Fourth Ward. State actors will be evaluated on the extent to which local political bodies, including City Council, the Atlanta Housing Authority, the Atlanta Development Authority, as well as state and local policies shape where supermarkets are built and where neighborhood redevelopment takes place. Finally, community based actors will be evaluated through newspaper accounts and through neighborhood planning unit (NPU) minutes.

Outline of Dissertation

This dissertation research is divided into five chapters. The second chapter outlines the theoretical framework I employ to structure and ground the analytical and methodological approach. The main purpose of this chapter is to provide justification for the variables used in this study and to trace the ideas and the concepts I find pertinent to this discussion. In particular, the chapter will provide a thorough discussion of political

economy, urban political ecology, and social movement literature to ground the discussion of food deserts in Atlanta. In addition to providing the rationale for the variables I have chosen to engage in answering the two research questions, I explain why the concept of *food deserted* is more theoretically insightful.

The third chapter, titled "Methods: Mixed Method Approach to Studying Food Deserts," will explain both the quantitative and qualitative methods used in the project. The chapter will identify the approach used in the geo-spatial analysis. It also outlines the key variables used in the descriptive analysis of food desert census tracts and those included in the regression analysis. Additionally, this chapter outlines the case study approach and provided an overview of the two neighborhoods used in the case study. This chapter will also outline my methods of data collection, data management, and analytical tools.

The first research question, what are the influential demographic and spatial patterns that have shaped supermarket access in low-income neighborhoods across Atlanta from 1980 to 2010, is answered in the fourth chapter. There are essentially two parts to this chapter. The first part describes the demographic and economic conditions across the City of Atlanta from 1980 to 2010 using geo-spatial analysis and methods. Additionally, this information is then used to provide an analysis of what census tracts are designated as food deserts for both 1980 and 2010, allowing for a comparison across time. The second part is a descriptive analysis of food desert tracts and non-food desert tracts to understand what salient features distinguish one form the other. This section also includes a logistic regression analysis to understand what demographic and economic variables are most influential in determining whether a low-income census tract is

designated a food desert. Ultimately, this analysis shows that the concentration of poverty, racial segregation, and population density are influential characteristics of food deserts.

The fifth chapter addresses how the movement of capital, the influence of urban political regimes, and community groups shaped food environments in the Pittsburgh and Old Fourth Ward neighborhoods of Atlanta, using redevelopment plans and news accounts as the core data set. This analysis uses a coding scheme developed from the theoretical framework outlined in chapter two. This chapter begins with a review of code counts and code co-occurrences as an indication of where possible themes might exist in the data. Following this section, the chapter describes major themes and actors that stem from both the coding analysis of redevelopment plans and a review of news accounts of redevelopment initiatives that included the development of supermarkets. Overall, this chapter identifies where market actors, state actors, and community-based groups have influence in the process of commercial and retail redevelopment initiatives in the case study sites.

The final chapter discusses the main findings of the research project overall and identifies implications for food access in Atlanta, the use of 'food desert' as a conceptual tool in research going forward, and implications for the theoretical framework employed. It ends by outlining directions of future studies that may prove fruitful and particularly illuminating to future scholarly debates.

Definition of Terms

For the purpose of clarity, the following terms are is used throughout this dissertation:

Food access. In some parts of this dissertation, I refer to access as a generalized concept of a person's or a community's ability to readily, safely, and affordably access a supermarket that sells fruits and vegetables. In other parts, particularly for quantitative descriptions of a food desert, I define access using a Euclidian distance measurement of one mile. If a tract is more than one mile from the nearest supermarket, it is labeled as having low food access.

Food desert. I use the definition of food desert established by the USDA, Department of Treasury, and the Department of Health and Human Services. A food desert is defined "as a census tract with a substantial share of residents who live in low-income areas that have low levels of access to a grocery store or healthy, affordable food retail outlet" (USDA 2014). Low-income is defined as a tract with a poverty rate of 20 percent or greater or a median family income at or below 80 percent of the area median family income. Additionally, 'low-access 'for urban areas indicates that at least 33 percent of the tract's population lives more than one mile away from a supermarket or large grocery store. My use of the term 'food desert' throughout this dissertation is intended more as a measurement and quantified assessment of food access rather than an endorsement of the term as a conceptual tool.

Food vulnerable and food vulnerability. Food vulnerability is a concept that I explore more deeply in the theoretical framework and is developed by Agyeman and Simons (2012). Their work applies the "concept of food vulnerability to highlight the

interactions among food production, food access and political and economic asymmetries" with a focus on how these interactions further exacerbate the conditions that render certain populations vulnerable (2012: 86). Their analysis understands 'food deserts' to be the result of "a history of disinvestment in and neglect of mostly low-income urban and rural areas, which have not been recognized as profitable sites for supermarket and grocery store location and have therefore been left with limited and often less healthy, more expensive options for food access, such as corner stores and fast food establishments" (2012: 87).

Supermarket: Following the work of Dutko, Ver Ploeg, and Farrigan (2012), I define supermarkets as food stores with at least $2 million in sales that contain all the major food departments found in a traditional supermarket.

CHAPTER 2

THEORETICAL FRAMEWORK

Introduction

This dissertation research explores the patterns of food vulnerability in Atlanta from 1980 to 2010 by situating food deserts in the context of urban change, redevelopment, and gentrification. This context is significant for three reasons. First, while there is a burgeoning field of food studies investigating the characteristics and impact of food deserts, few studies approach questions of food access within the context of urban redevelopment and gentrification. Additionally, while there are scholarly efforts to illustrate the spatial relationship between food access, race, class, and inequality, few studies specifically name gentrification as an urban process that is both mediated by and mediates food access. Second, this approach addresses the dynamic nature of urban change that shapes how food is distributed in neighborhoods across Atlanta. Urban redevelopment is constantly occurring: neighborhoods are being imagined, negotiated, planned, invested in, and divested from sometimes consensually but more often not. Understanding food in this context can help explain why some neighborhoods 'solve' the food desert problem, while others do not. Third, scholars studying urban change and gentrification have already examined the flow of retail capital and neighborhood change by understanding the relationship between capital, power, and inequality. Using the insights from this research to examine food access can sharpen our analysis of retail food distribution in urban neighborhoods and hone our understanding urban change in the process.

This orientation requires an interdisciplinary theoretical approach. The distribution of food is shaped by several factors, including food retailing and the emergence of supermarkets, capital investment in the built environment, the concentration of poverty, residential segregation based on race, and the work of people – as individuals and collectives – that have facilitated or resisted the status quo. Additionally, these factors are themselves influenced by particular historical processes, decision points, and actors. Therefore, undertaking this research direction requires a theoretical framework that captures these influential factors, values historical significance, and lends itself to sound research methods.

This chapter explains the theoretical framework employed to understand food access in Atlanta. In particular, urban political economic theories are used to understand the supermarket industry within urban redevelopment, the influence of race and racial segregation, and the impact of concentrated poverty on food vulnerability. Additionally, the theoretical approach used in this study helps elucidate food access in Atlanta as the result of the interaction between the political economy, historical conditions, geo-spatial factors, and local experiences. Rather than adhere dogmatically to one theory to hypothesize relations, I draw upon urban political economy to understand how the supermarket industry, urban redevelopment, poverty, and race interact. What might initially seem to be a set of disconnected standpoints is really a useful theoretical toolkit with which to understand the complexities inherent in studying urban food access. This chapter provides a detailed explanation of this toolkit and a review of the conceptual and analytical openings it provides.

This chapter is divided into two parts. Part one discusses the literature on food deserts and the epistemological critiques leveraged against some of the research trajectories. This section also includes a historical review of supermarkets and how they have come to dominate much of the urban food retailing landscape. I also provide a context for understanding how racial segregation concentrates poverty and the associated implications this has for food retailing. This section provides background information on redevelopment and gentrification – what it is, characteristics, and influential factors based on research from the last fifteen years – and the implications for a renewed theoretical framework for understanding food deserts against this backdrop.

I then move to explain how urban food access is not only about the market economy, but also about political mechanisms and governing regimes that dictate the priorities for urban growth and redevelopment.

The second part of this chapter distils the three related theories into one cohesive framework from which to investigate the patterns of food access in Atlanta from 1980 to 2010. The central point of this section is to expand the food desert concept to food deserted neighborhoods in order to capture the historical threads and complexity explored in part one and two. In sum, this final section translates these theories into a set of hypotheses that explain the socio-political conditions through which the development of food deserts has occurred over the past thirty years in Atlanta. The methods that use this theoretical framework are outlined in Chapter 3.

Background

Food Desert Literature and Related Critiques

The problem of limited availability of food is not new. For decades, under-resourced communities of color have seen large-format supermarkets open up in the suburbs and close down in the inner city (Treuhaft and Karpyn 2010). The problem of limited food access for low-income urban communities was given federal scrutiny with the establishment of the National Commission on Food Marketing in 1964 (Public Law 88-354, 1964). In its investigation, the committee discovered that grocery stores in urban areas had poor physical conditions, lower-grade meat, wilted produce, and offered their employees fewer promotions. Twenty-seven years later, Bo Emerson, a journalist for the Atlanta Journal Constitution, described the persistent problem in more stark terms saying that neighborhoods south of downtown are where "storefronts are few, but the crack trade is brisk" (Emerson 1991: 81). Moreover, low-income urban residents have not only historically dealt with a dearth of food retail options but also with the ramifications of grocery stores building their new locations further outside of the inner city. As Atlanta sprawled out to the northern suburbs in the post-war period, supermarkets like Publix and Kroger followed because, as Georgia Tech marketing professor Fred C. Allvine surmised in the early 1990s, "those areas have the higher-income white-collar residents" that these stores are after (Murray 1992c: 1). Atlanta's low-income residents have not been the only ones to notice the city's uneven distribution of grocery stores. In 1991, Cecil Philips, an Atlanta real-estate developer, decried the fact that "there isn't a grocery store downtown" because it prevented the successful redevelopment of old buildings into profitable downtown loft living (Murray 1992c: 1). By focusing too narrowly on contemporary

conditions the concept of 'food deserts' has a tendency to mask the historical struggle over food access that communities have engaged in for many years.

Understanding why the concept of 'food deserts' emerged as a topic of investigation – and the epistemological challenges it presents – is important to this story. At base, the focus on food deserts emerges from an environmental (or 'ecological') model of public health, one that looks specifically at how the built and social environment influences individual behaviors like eating and physical exercise (Egger and Swinburn 1997; Swinburn, Egger and Raza 1999). Rather than narrow in on the health of individual bodies, the environmental model problematizes the setting and contexts in which those bodies exist. This approach has given rise to studies on the role of social factors (most typically socio-economic status) and environmental determinants (for example, the density of fast-food outlets and supermarkets) in the creation of environments in which the poor have increased exposure to energy-dense foods that promote obese bodies (Reidpath et al. 2002). The assertion that the environment determines your health, in particular your weight, is described as the 'obesogenic thesis.' Relatedly, Swinburn et al. (1999) have extended this logic by arguing that if some environments promote obesity (obesogenic), then others must promote leanness (leptogenic). The focus is often on the availability of sidewalks and walk-able streetscapes, parks, fast-food restaurants, convenience stores, public transportation, etc. According to the obesogenic environment thesis, the availability (or lack thereof) of these amenities shapes your health and your body weight.

Guthman's (2011) most recent work on the obesogenic thesis critiques its muted racial and class connotations and suggests that some bodies (typically male and white)

are socially permitted to be obese, while others (typically non-white and non-male) are chastised and scolded for their larger bodies. According to Guthman and others (see Shannon 2013), this underlying assumption has direct implications for research on obesity and food deserts. This double standard promoted further research and monitoring of non-white and poor obese bodies and their environments and leaves other (rich and white) bodies largely unexamined and under-scrutinized. The growth of food desert research on poor and non-white neighborhoods and residents originates from this environmental model of public health and its related obesogenic thesis. If the underlying charge is that some built environments promote leanness, while others – like food deserts in low-income neighborhoods– facilitate obesity, what characterizes obesogenic environments?

Arriving at a finite definition of food deserts is made complicated by the many different elements emphasized by those who study them. At base, the United States Department of Agriculture defines food deserts as "urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food" (USDA 2014). These neighborhoods typically have no access to food or are inundated by fast food options or convenience stores that have limited fresh and healthy food options. The body of research on food deserts in the United States describes some common characteristics of these obesogenic environments (Ashman et al.1993; Bitler and Haider 2011; Beaulac et al. 2009; Larsen and Gilliland 2008). By and large, there are four overall areas of inquiry in which food desert research falls: health and nutrition, economic analysis, geo-spatial analysis, and investigating alternative food distribution systems. Research in each of

these four broad thematic areas has served to illuminate different aspects of food deserts and their characteristics.

The health and nutrition angle has largely attempted to quantify the impact of the limited availability of nutrient-dense foods in low-income neighborhoods (Walker, Keane and Burke 2010). Hendrickson et al. (2006) found that food in food deserts was of poorer quality and less affordable than non-food deserts, and that food deserts resulted in decreased access to healthy foods overall. Additionally, Lewis et al. (2005) found that restaurants in lower-income neighborhoods typically did not offer healthy choices. Income and proximity to a supermarket were found to be negatively associated with risk of obesity (Lopez 2007). In one study on school children, researchers found a positive correlation between children who were overweight and the percentage of children that lived in a food desert (Schafft et al. 2009).

The economic and market analysis approach has also illuminated key characteristics of food deserts. Research using statistical methods has determined that higher poverty rates and a higher proportion of non-white population increases the odds that a low-income census tract will also be a food desert (Dutko, Ver Ploeg, and Farrigan 2012). Other studies have concluded that poor neighborhoods typically have 25 percent fewer supermarkets than middle-income neighborhoods (Powell et al. 2007; Alwitt and Donley 1997; Morland et al. 2002; Moore and Diez-Roux 2006). In addition to having disproportionately fewer supermarkets, poor neighborhoods also have fewer healthy and fresh food choices at convenience stores and fast food locations (Zenk et al. 2005; Lewis et al. 2005; Glanz et al. 2007). Furthermore, the cost of food is lower at chain grocery stores than at small independent or convenience stores (Chung and Myers 1999) and

supermarkets are also able to offer greater variety (Kaufman et al. 1997). Morris et al. (1992) compared one low-cost shopping list at two types of stores – chain supermarkets and smaller stores – and determined that the cost was higher in smaller stores for the same items. Overall, these studies highlight the economic factors that shape and characterize food deserts and emphasize the role of the market economy in the development of food deserts.

Other studies have honed in on the geo-spatial patterning of food deserts and their relationship to other demographic variables. Predominantly black neighborhoods have been shown to have more fast-food restaurants (Block, Scribner, and DeSalvo 2004) and more non-chain grocery stores that offer poorer quality foods (Block and Kouba 2006; Moore and Diez-Roux 2006; Morland and Filomena 2007; Raja et al. 2008). Chung and Myers (1999) concluded that chain supermarkets typically locate outside of high-poverty inner-city areas. Relatedly, supermarkets that are in the inner city have shown to have higher prices than their suburban counterparts (Kaufman 1997). Ultimately, most research on urban food deserts have demonstrated that obesogenic environments are created and mediated by the relationship between food, race, class, and inequality and have a unique spatial element.

Overall, these studies have largely confirmed the obesogenic thesis that food deserts act upon people and make them fat and unhealthy. However, there are three fundamental problems with the obesogenic environment approach. First, placing emphasis on the ways that the environment shapes and restrains individual behavior regrettably masks individual agency. People are not simply passive victims of their environment – they shape it, find alternatives, undermine it, re-imagine it, etc. This goes

for everyone across race, class, and social position – but, as I explain below, everyone does not have the same capacity and power to shape and decide the environment they live in. An individual's capacity and degree of agency is also shaped by structures of inequality and power that make up the social landscape. Second, the environmental approach to public health emphasizes the built landscape, but does little to explore how that landscape changes over time. It is woefully ahistorical and therefore lacks attention to the history of urban change – which includes numerous class conflicts, political fights, and social struggles – and the ideological legacies that influence that change. Third, and finally, this approach sets up the solution to food deserts far too simplistically. Based on this perspective the solution is changing the environment – add more supermarkets and subtract fast food chains – and pays little attention to the underlying political and economic processes that act 'behind the scenes' to shape the urban environment. The obesogenic environmental approach is right about expanding the analysis of health and power beyond the individual body, but it swings too far to the opposite pole by granting too much explanatory power to the built environment, which is also the result of past struggles and actions.

Ultimately, the theoretical framework I propose here responds directly to these critiques of recent food desert literature and joins other scholars who are working to build sharper analytical tools that treat power and inequality (and their histories) as central to the larger food desert story. Importantly, this theoretical framework re-centers the focus off of black, brown and poor bodies that have been rendered as objects acted upon by exogenous environments and shifts the gaze to the social, economic, and political processes of urban change, racial segregation, the concentration of poverty and the people

who facilitate and resist that change. I argue that food deserts are a function of racism and capitalism, and the other side of that equation is inscribed on the urban landscape in the form of inadequate access to food. Therefore, understanding food deserts does not require a focus on race or class but on *racism* and *capitalism* – systems and structures with values and rules that have patterns and some measure of predictability. In other words, we need to go beyond focusing on individual racial identities and class characteristics (as demographic measures) and instead focus on these systems and hierarchies of inequality and the processes that undergird them. This requires an analysis of change over time. In doing so, I hope to directly challenge any understanding of food deserts as new or random, and the assumption that those who reside in them are powerless.

Food Vulnerability, Market Actors, and the Supermarket Industry

Dooling and Simon's (2012) work on the production of urban food vulnerabilities uncovers how racism and capitalism interact to produce food deserted communities. Their work delves deeper into the question of risk and vulnerability by examining the city (and its interrelated biophysical, economic, political, and cultural systems) through the lens of vulnerability. The concept of 'vulnerability' is defined as "the product of people's exposure to an environmental hazard," and is linked with social vulnerability, which refers to people's "capacity to anticipate, respond to, and recover from exposure to a chronic stressor or perturbation" (Collins and Jimenez 2012: 50).

Along the same lines, Agyeman and Simons (2012) developed the framework of urban vulnerabilities further by applying it to local food systems. Their work applies the "concept of food vulnerability to highlight the interactions among food production, food

access and political and economic asymmetries" with a focus on how these interactions further exacerbate the conditions that render certain populations vulnerable (2012: 86). Their analysis understands 'food deserts' to be the result of "a history of disinvestment in and neglect of mostly low-income urban and rural areas, which have not been recognized as profitable sites for supermarket and grocery store location and have therefore been left with limited and often less healthy, more expensive options for food access, such as corner stores and fast food establishments" (2012: 87). This understanding allows for food access vulnerabilities to be conceived as people's inability to respond to and/or recover from limited access to food. It also clarifies where this vulnerability is concentrated – in low-income and poor neighborhoods that are also products of racial discrimination. Food vulnerability, therefore, is a product of capitalism and racism.

Specifically, urban food vulnerability is in part influenced by the unique position of food in the market economy. Even though humans need food to survive, access to food is beyond the control of the individual or the community. In the United States, food is no longer produced in the home but rather long distances away and under the purview and control of large conglomerate corporate operations. Food, even though it is necessary for our survival, is not distributed based on need but rather on one's ability to purchase it. Consumers use their economic position to purchase a commodity – food – that will keep them alive. While there are certainly exceptions to this description (emergency food systems and food pantries, for example) the vast majority of people in the United States get food from supermarkets (ERS 2013). Because food is a commodity and the distribution of food is based on the ability to pay for it, and that distribution largely takes place via supermarket systems, supermarkets have tended toward a pattern of spatial

distribution that concentrates in middle and high income neighborhoods while deserting low-income communities.

Market actors, including supermarket, shape food access. There are several components to local food environments and this study focuses on one type: supermarkets. Supermarkets have a unique history, and it is worthwhile to examine different aspects of this history and their relevance for this study. In the early 1900s, food retail was primarily comprised of local independent grocers that operated within a low profit margin (Eisenhauer 2001). After World War II, the large self-service food retail stores expanded within the food retailing industry and supermarkets grew from capturing 35 percent of the market in 1950 to 70 percent by 1960 (Eisenhauer 2001). Through 1980, smaller independent stores were left unable to compete as large supermarkets engaged in price wars to gain market dominance.

Supermarkets, however, did not proliferate equally across all neighborhoods. Throughout the 1980s, "cities experienced a net loss of supermarkets" (Eisenhauer 2001: 128). Industry representatives explained this trend as a "function of higher urban land, labor, and utility costs, low profit margins on more perishable food items, and increased theft problems in urban locations" (Eisenhauer 2001: 128). The general industry sentiment was that it was not profitable to serve distressed areas when profits in the outer suburbs came so easily (Turque 1992). These practices resulted in what amounts to supermarket 'redlining.' By 1995, the "poorest 20 percent of urban neighborhoods had 44 percent less retail supermarket space than the richest 20 percent" (Emert 1995). Due to the vacant post-industrial warehouses and factories in the inner cities, large supermarkets hoping to locate in urban communities were often constrained by the "unavailability of

large plots of land in cities to accommodate stores that are now upwards of 50,000 square feet - which often requires purchasing multiple lots" (Eishenhauer 2001: 128). In Atlanta, supermarket growth in the 1980s and 1990s was primarily in the outer northern suburbs away from the central city. For example, when Publix was strategizing on where to build in Atlanta in 1992, they focused on high growth areas, "skipping the slower growth and higher real estate costs of the central city and DeKalb County" (Holsendolph 1992).

Despite the seemingly inevitable progression of supermarkets to market dominance there were coordinated efforts to resist supermarket takeovers and to shape how they expanded. Various social groups have advocated for their proliferation, while others have derided them. Even before supermarkets dominated food distribution, grocery chains were increasingly edging independent grocers out of business. During the 1920s and 1930s, the anti-chain movement mobilized communities to fight the 'invasion' of grocery chains and accused chain stores of taking money out of the local community, driving local retailers out of business, and leading an effort to depersonalize the community (Zimmerman 1955: 3). As part of the effort, anti-chain legislation passed in state and local legislatures with the goal of taxing chains out of business (Zimmerman 1955: 5).[3] In response, chains framed their position as helping the food retail industry take advantage of unique market opportunities; they billed themselves as 'innovators' in merchandising. As innovators, chain stores saw their approach as maximizing "the chain

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[3] In the 1930s, A & P was the first chain store to enter the supermarket field. In Atlanta, A & P operated six supermarket format stores by 1937. In an ironic turn of events, chains stores and independents worked together to propose anti-supermarket legislation but were largely unsuccessful. By 1940, there were 6,171 supermarkets in 48 states and the national trend was leaning towards larger market formats (in excess of 10,000 square feet) and self-service formats became more popular, especially with the limited labor force during the war (Zimmerman 1955: 126).

store system of merchandising with all its modern methods of scientific economy and efficiency" – a very different approach from independent grocers who offered no lighting or heat in their stores, relied heavily on family labor, and paid scant attention to merchandising or advertising (Zimmerman 1955: 8).

While it is true that food retailers had been experimenting with different elements of the supermarket model since the turn of the century, the first widely recognized supermarkets were King Kullen in New York (opened in 1930) and Big Bear Supermarkets in New Jersey (opened in 1932). At that time, a supermarket was defined as a "highly departmentalized retail establishment, dealing in foods and other merchandise, either wholly owned or concession operated, with adequate parking space, doing a minimum of $250,000 annually" (Zimmerman 1955: 18). Michael Cullen, the founder of King Kullen stores, suggested that "the location of stores be away from the high-rent district [of downtown]" and have plenty of space for parking (Zimmerman 1955: 32). The main attraction, Kullen explained, were the low prices the stores could offer. Kullen promised to save the public three dollars on their food bills because of his below-wholesale prices, and he made good on that promise. Kullen was able to offer such low prices because he had a simple system that took advantage of economies of scale – "he could sell his groceries at the lowest possible markup because he was doing more business under one roof than could be done in a hundred neighborhood stores" (Zimmerman 1955: 38).

The large volume of sales that this profit model required made the supermarket largely a city proposition, where a large concentration of consumers could be found. Initially, supermarkets gave little consideration to location and appearance, "fixtures were

of the crudest type...the buildings were mostly vacant factories, garages, etc." (Zimmerman 1955: 55). The lackluster appearance of large warehouses and factories – which were at that time located near the inner city – indicated thrift and economy to the consumer.

In the post-war period, supermarkets drastically expanded. In 1946, the national supermarket industry accounted for 10,057 stores in 48 states with a sales volume of approximately 5 billion dollars (Zimmerman 1955: 140). In 1953, there were 298 supermarkets in the state of Georgia averaging $959,700 in annual sales (Zimmerman 1955: 139). By 1954, the sales volume of supermarkets increased to 16.1 billion dollars.

There were several reasons for the expansion of the supermarket industry. First, population growth in the suburbs offered new opportunities for supermarkets to expand. Second, investment capital treated supermarkets as a profitable investment. Supermarkets found it easy to obtain capital as banks, insurance firms, and stockholders saw their growth potential. Third, supermarkets were also keen to invest in market research to improve their bottom line. In the late 1940s, Colonial Stores, Inc. in Atlanta researched the spending habits of consumers in large format stores when compared to small format stores and discovered that "customers buy 2.58 times as much in the larger market as they do in the smaller stores" (Zimmerman 1955: 143). As a result, supermarkets were increasingly seen as the new wave of food retailing that could boost sales and thus profitability. Finally, the expansion of the supermarket industry was bolstered by developments in other related industries like "the magic-eye door, the evolution of the shopping cart, the adjustable shelving, refrigerated cases and coolers, price tags, price-marking equipment, cash registers, and many other technical and mechanical

innovations" (Zimmerman 1955: 152). When these market and industry trends are considered together, supermarkets were to become the dominant method of food distribution across cities and metropolitan areas.

By the 1960s, the science of supermarketing had become even more sophisticated. Location research had become a large part of how supermarkets were built. Whereas in the early years of the supermarket industry, operators of stores had very little challenge finding profitable locations due to high demand and limited competition, that landscape began to change in the post-war years. Location research became necessary in the post-war period because desirable locations were in high demand, the cost of renting and constructing buildings increased, and competition between supermarkets intensified. Investors and supermarket owners had to be strategic about where they placed their stores. As a result, extensive and detailed supermarket location research became necessary:

> "Before making a final commitment on a location, the operator delves deeply into every phase of the surrounding community...he checks the population, the average age of the residents, whether they are foreign-born or native, the percentage of male to female, their economic level, health data, size of the average family unit, appraises the per capita family earnings to determine what the possible sales per family may be… [and] looks into other physical factors of the community: whether it is industrial or residential, whether there are more apartment houses or private dwellings. He checks the rents, the number of people who are homeowners, the average size of the apartment..." (Zimmerman 1955: 168).

As Zimmerman's explanation above illustrates, the communities and neighborhoods of potential supermarket locations were methodically scrutinized, planned, and evaluated. This scrutiny included the behaviors, identities, and consumption patterns of local residents.

Supermarkets and their Consumers

Humphery's analysis highlights how supermarkets often projected the image of choice and egalitarianism, but were also hyper-aware of the "different buying behaviours, tastes, preferences, and financial capabilities of particular groups of people" (1998: 5).[4] In this way, supermarkets were actively demarcating and fragmenting groups of consumers who visited particular establishments and bought particular goods. Humphrey's analysis of supermarket consumer cultures insists that "retailers develop *retail forms* and construct *retail cultures*; they do not create smoothly functioning mass consumer cultures, however hard they may try" (1998: 5). In other words, consumer cultures are comprised of the nexus between those who have goods to sell and the people who have the ability to buy, and these cultures themselves reflect social differences. Retail environments, therefore, have "no power to make consumer cultures until those environments are peopled, and until those socially and culturally differentiated people begin to identify as possible consumers" (Humphery 1998: 5-6). Ultimately, supermarkets are as much about the people surrounding them as they are about the brick and mortar used to build them. Thus, supermarket retailers transformed into social engineers and urban planners during the post-war suburban growth. The suburbs represented new space where retailers, government, planners, and developers could align in their vision for shaping the city.

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[4] In historical treatments of the supermarket, it has been understood as an opportunity for women to shop without the watchful eye of the store clerk and was free to "accept or reject any article without interference or without high pressure" (Zimmerman 1955: 52). In many ways, the 'profile' of the typical supermarket shopper has changed since its initial emergence and includes solitary male shoppers and shoppers from all class and ethnic backgrounds (Humphery 1998: 5).

This new form of large format supermarkets did not prove advantageous for all consumers. Writing in 1970, Jennifer Cross outlined the shopping problems for the 25.4 million people living at or below the poverty line across the country. According to Cross the poor paid more for food and there were fewer supermarkets in urban areas nationwide where approximately 15 million of the poor lived. Unlike suburban shoppers who had ample choice of supermarkets, poor urban residents were lucky if they had just one. By 1970, although supermarkets had expanded their share of the market overall, they were not located evenly across the urban landscape.

Cross credited the uneven distribution of supermarkets to a number of factors. First, she suggested that the market economy prevented supermarkets from opening in urban locations because operating and occupancy costs were considerably higher in these locations owing to low sales volume, labor costs for training and turnover, and theft. Additionally, land was difficult to obtain in urban areas because 40,000 - 80,000 square-foot lots were hard to find (Cross 1976: 119). Lacking supermarket options, the poor were forced to shop at independent smaller grocers who often charged more.

Cross did not lay blame entirely on the retail industry; they were, after all, trying to make a profit in an economic system that prioritized profit over equity. Logically, the poor make horrible consumers because, "they spend less, they can often only afford to buy one meal at a time, [and] they take less advantage of specials" (1976: 121). Welfare consumers spend heavily twice a month when payments are received, but do not consume much between those times. Additionally, Cross argued that the consumption habits of the poor had a direct impact on their health. The poor "rely heavily on convenience foods, particularly TV dinners… [which] are more expensive and generally poorer in food value

than home prepared meals" (Cross 1976: 122). Cross tied this to larger systemic conditions of poverty and the free market: "Caught in the vicious circle of poverty, the poor and the stores which serve them are trapped by the worst aspects of the free enterprise system" (Cross 1976: 122).

For all the problems Cross identified with the food retailing industry, she clearly understood that the solutions were not going to come from within the industry itself. Cross underscored "the fundamental inability of the private sector to solve deep-rooted economic and social problems" (1976: 127). Because supermarkets were part of a larger market system, solutions were not likely to come by industry initiatives. In the past, Cross explained, the food industry has shown no particular interest in trying to solve the problem of unequal access, "because it cannot subsidize non-profit-making ventures, or radically alter the rules of its competitive game" (1970: 127).

If solutions to disparate supermarket access were not industry-driven, perhaps consumers and communities hold the key to change. In the 1970s, the public and consumer-advocates increased pressure to "make the food industry assume more social responsibility for providing the poor with a reliable low-cost food supply" (Cross 1976: 125). One concern was price. Supermarket chains in low-income areas charged higher prices – a charge that was confirmed at the time by citizen's advocacy groups and newspaper investigations into price discrimination (Cross 1976: 124). The response from the industry was slow, but community groups organized in their interest. For example, the economic arm of the Southern Christian Leadership Conference formed "Operation Breadbasket" from 1962 to 2972 and "successfully boycotted ghetto stores, demanding fair prices, better quality food, and increased hiring of black workers" (Cross 1976: 127).

Others tried to establish alternative food-retailing businesses in the form of smaller consumer co-ops and food buying clubs with the help of anti-poverty programs. Cross herself advocated for the federal initiatives to subsidize supermarket expansion into urban areas and suggested "this is the kind of corporate socialism firms understand, allowing taxpayers to underwrite the losses while freeing them to make a profit" (Cross 1976: 128). Ultimately, Cross' analysis highlights the central importance of race and class in relation to supermarket access, and these issues figure prominently in Atlanta's food vulnerability.

Racial Segregation and the Concentration of Poverty

Food access is shaped by structural systems of inequality. More specifically, limited food access is influenced by the interaction between racial segregation and the concentration of poverty. The concentration of poverty alone does not explain the dearth of supermarkets in Atlanta's poor neighborhoods. Rather, as Massey (1990) and Massey and Eggers (1990) have demonstrated, racial segregation ensures that poor black neighborhoods will experience a greater concentration of poverty that poor white neighborhoods and racially mixed neighborhoods do not.

Poor blacks reside in areas south Atlanta, while middle and upper class blacks have tended to live to the west and are scattered within upper class white neighborhoods in areas north of the city. According to Massey (1990), the residential segregation patterns that concentrate poor blacks in specific parts of the city make those communities pockets of extreme concentrated poverty. This has been facilitated, in part, by a steady rise in income inequality since the 1970s which was accompanied by a decline in family

income overall and a shift away from manufacturing to service industries in urban areas across the country (Massey and Eggers 1990: 1154). Racial segregation and the concentration of poverty are positively correlated because "the imposition of racial segregation on a residential structure that is also segregated by class works to the detriment of poor blacks and to the benefit of poor whites" (Massey 1990: 336). In other words, racial residential segregation acts to concentrate poverty and when a group's poverty rate increases under conditions of high segregation (which is true for blacks), poverty is further concentrated where those groups live even without middle-class members of that group moving out.

Massey (1990) further emphasizes how this concentration of poverty takes on a specific geographic and spatial characteristic. Changes in the economic status of a minority group that come about from exogenous forces (deindustrialization, suburbanization of employment, rise in low-wage service sector work, etc.) will not only increase the poverty rate for that group as a whole but it will also result in the *geographic concentration of poverty*. As Massey points out, "this geographic intensification of poverty occurs because the additional poverty created by the exogenous shock is spread unevenly over the metropolitan area" (337). Therefore, under conditions of racial and class residential segregation that have developed in Atlanta, increased poverty is more likely to be confined to poor non-white neighborhoods.

The concentration of poverty in poor non-white neighborhoods in south and southwest Atlanta is significant in determining access to fresh, healthy, and affordable food in three ways. First, as Massey highlights, economic shifts – particularly those that increase vulnerability for poor communities – have the ability to rapidly and dramatically

transform the socioeconomic environment experienced by poor non-white families (1990: 337). This means poor non-white communities are particularly vulnerable to increased unemployment, major market downturns, lack of capital, and changes in the overall economic vitality of the city. Market shifts that produce economic instability overall for everyone thus have the added effect of hitting poor non-white neighborhoods – specific geographic areas – in catastrophic and transformative ways. Therefore, if we apply this understanding to the specific geographic patterns of Atlanta's segregation, non-white and predominantly poor neighborhoods in south and southwest Atlanta will experience a greater share of the impact of economic insecurity.

Second, the concentration of poverty in non-white neighborhoods not only increases vulnerability to economic crises, but it also intensifies the other social and economic conditions that accompany poverty. These conditions include, for example, "reduced buying power, increased welfare dependence, high rates of family disruption, elevated crime rates, housing deterioration, elevated infant mortality rates, and decreased educational quality" (Massey 1990: 342). Therefore, the concentration of poverty that occurs when the non-white poverty rate increases in the city also facilitates a whole set of other changing conditions that directly impact the well-being and health of those who live in those neighborhoods. For example, public services that rely on local taxes are cut or severely limited, housing stock deteriorates because homeowners do not have the expendable income to maintain and rehabilitate property, and mortality rates rise because people are less able to pay for medical services. In sum, the intensification of poverty in racially segregated poor neighborhoods in Atlanta goes beyond income and unemployment; people's lives, health, and personal ability to cope and survive are

adversely affected.

Third, the concentration of poverty in racially segregated neighborhoods, and its associated intensification of other social and economic conditions that accompany poverty, directly effects people's ability to access fresh, healthy, and affordable food. Economic shocks, including unemployment and loss of income, directly hamper the buying power of a neighborhood. For poor racially segregated neighborhoods, as noted above, are especially vulnerable to these market shifts. In the absence of racial or class segregation, Massey notes, this loss of buying power would be distributed evenly throughout the city (1990: 344). However, in the presence of racial and class segregation, retail profits, tax revenues, and service revenues decline (and related businesses and service organizations close) in less-resilient poor non-white neighborhoods. Therefore, "racial segregation takes the overall loss in black income, concentrates it spatially, and focuses it on fragile neighborhoods that are the least able to absorb it" (1990: 345). As a result, closure for non-essential business like supermarkets and grocery stores – where access to fresh, healthy and affordable food is most likely – is virtually guaranteed. In sum, increased poverty in conditions of racial and class segregation decreases the buying power of non-white poor neighborhoods and through a constellation of other deteriorating social and economic conditions makes it increasingly challenging for a retail business to operate successfully in those very same neighborhoods. Therefore, racial segregation and the associated concentration of poverty is a vital component to Atlanta's food desert story.

Tracing the flow of capital can only describe part of the food desert story. The influence of local government, private interests, and the agency of local people to accept

or reject the location of where food is available are also important to consider. Because the "production and consumption of food has always been socially organized," social change in how we relate to food is not only an economic transformation but also a social one (Bello, 2009: 19; Polanyi, 2001). If we consider Polanyi's (2001) argument that the market economy is socially constructed and the state creates and enforces certain behaviors and values that are compatible with the market, then we must also consider this for food environments and food retailing. If the state has a hand in shifting social factors in ways that create an abundance of food deserts in some areas over others, then how have local governing institutions played a role in Atlanta's development?

Atlanta's business sector has long influenced political decisions that have shaped the city's built environment. Atlanta's governing coalition, or what Stone (1989: 3) calls the 'urban regime', is a partnership between city stakeholders, city hall, and the downtown business elite, that "surround and complement the formal workings of governmental authority." Although local government is formally responsible for governing, they do not have the resources and "the scope of authority to govern without the active support and cooperation of significant private interests" (Stone, 1989: 6). Therefore, the urban regime is a coalition between the public and private sectors and represents the solution to the conundrum of urban growth: local government cannot make and implement decisions without resources from business and private support, and private interests cannot make investments without the backing of political allies and their constituencies.

The ability of one sector of the urban regime to make and implement decisions for Atlanta's growth is related to how much power they have. Power includes the ability to

secure compliance to domination, to control circumstances, as well as "how political systems prevent demands from becoming political issues or even from being made" (Lukes, 2005: 40). In the urban regime, who has power is directly related to their access to and control of private resources and capital (Stone, 1989). Furthermore, as Winders explains, power also "determines the extent to which segments or classes can translate their economic interests into state policies" (2005: 389). Winders distinguishes between structural and instrumental power. While structural power of capital creates the conditions that protect and maintain capitalism, instrumental power is how economic actors codify their interests in the state. Importantly, classes or groups have structural power by virtue of their social position. Instrumental power manifests in attempts to influence state policy via acts of monetary contributions, lobbying, holding powerful positions within local government, or through other means of shaping state action (2005: 390). Throughout Atlanta's history, specific segments of capital and the business sector have held the most power.

Importantly, Winders' analysis sets the stage for us to investigate how economic interests form coalitions in order to translate their interests into policy. Coalitions formed between investment capital and Atlanta's mayors have coalesced on the economic priorities of urban growth and business prosperity. Economic interests are also important in forming long-term coalitions, since those interests remain relatively stable over time (Winders 2005: 390). Political priorities, on the other hand, are unstable because the compromises that are created out of negotiations may actually work against the economic interests of some coalition members. Therefore, coalitions and governing regimes based on economic interests are more enduring. Atlanta's governing regime has long been a

coalition based on the shared economic interests between local government and business.

For example, Bayor (1996) explains how Mayor Hartsfield's administration (1937 - 1962) and the downtown business elite formed the dominant partners in an urban regime focused on remaking the city's built landscape during the period of racial segregation. The location of Atlanta's highway is one example of this coalition's success. The business elite, "having long been concerned about the proximity of blighted residential areas to the business district…[advocated for a] north-south expressway [that] was to curve around the edge of downtown, forming a buffer between the business district and the black neighborhoods to the east" (Stone 1989: 32; Bayor 1996). Development decisions were based on racial inequality and resulted in black neighborhoods being sacrificed to white priorities. In one example, the county commissioner "turned a black neighborhood in the north side community of Buckhead into a public park – for whites only" (Stone 1989: 33). Similarly, the black neighborhoods of Buttermilk Bottom and Summerhill were cleared under the Federal Housing Act of 1949 to privately develop 'public' use facilities like the stadium and the civic center (Stone 1989: 38; Bayor 1996). By and large, black communities could offer little political resistance when business interests trumped local concerns. Atlanta's growth was not random or the result of the invisible hand of the market. Decisions made by both public and private actors have shaped the physical and political landscape and have strengthened the system of racism and the segregation it has created.

Some groups, however, did find opportunities to organize. Blacks organized political resistance to these changes in the built environment through local citywide campaigns. By the 1970s there was a shift to a new balance of electoral power in

Atlanta. A growing black population and "the greater concern of the national government for the rights of minorities and the diminishing state electoral base for anti-black politics" dramatically changed the context in which city politics was carried out (Stone, 1989: 77). With the support of federal policies and resources, blacks were politically emboldened and no longer needed to exchange their political support for the regime in return for meager victories. The 1973 election of Maynard Jackson, Atlanta's first black mayor, was the result of the new political power of blacks in the city. Maynard Jackson took office on a platform that prioritized reforming city politics to include black representation in the administration, and he instituted a new city council structure and local Neighborhood Planning Units that still operate today. Maynard Jackson's hands, however, were tied on some issues. He had little access to the institutional resources the business elite sector controlled (Stone, 1989: 95). With a "business community [controlling] key resources that enabled it to facilitate a variety of projects," Jackson was "pulled inevitably toward accommodation" with private interests (Stone, 1989: 95). This dependent relationship crystallized in the formation of the Atlanta Economic Development Corporation, which was set up outside of city hall and gave government-business cooperation an institutional foundation (Stone, 1989: 96). Much of Atlanta's development priorities since then have favored business stakeholders, not residents.

The momentary split in the governing regime during the Jackson administration has been the only real blemish in the history of Atlanta's governing regime. Since the 1980s, Atlanta's governing regime has been largely stable. It operates on a policy focused on "full-throttle development with almost no restrictions on investors" combined with some incentives for minority businesses (Stone, 1989: 159). This cooperation has tended

to serve only the interests of a small segment of the black electorate while leaving out the interests of smaller and less-established black business and the poor. The city's changing political regime has further bolstered Atlanta's redevelopment landscape. Middle-class blacks have all but left poor blacks behind in their planning processes. The new bi-racial coalition governing Atlanta is held together by a shared commitment to economic growth but has done very little - if anything - to "bring the city's resources together to meet the problems of poverty, ineffective schools, and an underdeveloped workforce" (Vale 2013: 143). In effect, this has created a tale of two cities – an Atlanta that leads the nation in income inequality, and an Atlanta that boasts a bourgeoning economic sector spurred by technology, finance, and the service sector (Berube 2014). Rather than acting as a political bloc to leverage power against the governing political regime, black residents in Atlanta are intensely divided along class lines. A growing black middle-class has given rise to black leaders that see self-help, role modeling, and the strengthening of family values as key initiatives to help the poor (Vale 2013: 143). Thus, Atlanta's redevelopment and gentrification since 1980 is not at all neatly packaged as upper-class whites pushing out poor blacks. Middle and upper class blacks are also part of the new wave of inner city dwellers and have largely been supportive of the priorities set by the development-driven political regime.

Gentrification, Redevelopment, and Food Access

This study also anchors food deserts in the process of urban change. Several processes facilitate changes to the built, natural, and social environment of the city, but I focus on two in particular: redevelopment and gentrification. Why focus on these two processes? Principally, the effects of redevelopment and gentrification can be seen over

time and are mediated by a variety of actors. Additionally, as Griffith (1996) notes, these processes belie post-war suburban migration patterns that characterize much of urban change up until the 1970s and capture the migration patterns of people moving back to the city. The scale of change is on the neighborhood level, and those who reside in redeveloped or gentrified neighborhoods feel the force of change first-hand. Additionally, focusing on redevelopment and gentrification narrows in on the specific mechanisms through which neighborhoods are planned, developed, maintained, re-planned, etc. by highlighting redevelopment plans, zoning ordinances, public hearings, city council resolutions and so forth. As I illustrate below, these two processes of urban change are part and parcel of larger economic, political, and social forces shaping the city. Therefore, focusing on them allows us to talk about specific occurrences of these larger processes and learn more about them and how they influence access to food.

The City of Atlanta has never been shy about redevelopment initiatives. From the 1950s, Atlanta's business community "consistently favored postwar urban renewal patterns that would deliver more upscale land uses and house more upscale people on the edges of downtown" (Vale 2013: 92). This orientation gave way to the clearing of several public housing projects in Atlanta's central district including Techwood and Clark Howell homes in preparation for the Centennial Olympic Games held in Atlanta in 1996. The planning process for this redevelopment project systematically excluded the majority of black public housing residents while City Council and business interests planned for the demolition of the housing stock and the removal of the people.

These redevelopment initiatives and changes in public housing came after the passage of HOPE VI, which was the Housing and Urban Development's first attempt at

deregulating public housing. The federal legislation allowed that public housing could be privately owned as long as the entity followed public housing rules (Vale 2013: 113). From the start, the redevelopment of Techwood into Centennial Place was never meant to restore public housing stock, it was intended to be "a catalyst for wholesale neighborhood rebranding, a transformation that would turn erstwhile Tech Flats into a sought-after school district and tourist destination" (Vale 2013: 136). Techwood represents the shift in public housing administration in Atlanta with the leadership of Renee Lewis Glover, who served as AHA's CEO from 1994 - 2013 and who championed the demolition of public housing in favor of Section 8 housing vouchers and mixed-income communities. Using HOPE VI funds and under Glover's leadership, Atlanta demolished all of its public housing by 2008, and leveraged substantial private investment to develop "well over a dozen 'master-planned, mixed-use, mixed-income communities'" (Vale 2013: 154). Yet this turn towards urban redevelopment and mixed-income development has felt more like displacement to those who have lived in those housing projects. Thus, urban redevelopment has been characterized by phrases like "live, work, play" and "in-town living," which have "become code words for gentrification and displacement of incumbent black residents" (Vale 2013: 145).

Gentrification is defined as "the conversion of socially marginal and working-class areas of the central city to middle-class residential use [and] reflects a movement, that began in the 1960s, of private-market investment capital into downtown districts of major urban centers" (Zukin 1987: 129). The term was first employed by Ruth Glass to describe changing working-class neighborhoods in London in 1963 (Griffith 1996: 241). For some, gentrification is seen as a positive economic trend capable of preserving the

central city after decades of disinvestment and decay. These scholars emphasize how the transformation of neglected and decaying buildings increases property values and tax allocations (see Lang 1986). However, not everyone agrees that gentrification is entirely positive, and there is significant debate on the extent of gentrification's benefits and the cost of displacing long-time residents. Beauregard (1985) divides the research on gentrification into three areas: approaches that examine gentrification as a way to transform decaying neighborhoods into preserved historical spaces, empirical approaches that examine the factors and characteristics of gentrification, and theoretical approaches that use Marxist theory to frame gentrification as one manifestation of class struggle between the haves and have-nots.

Distilling common characteristics of gentrification from the extensive literature on the subject is beyond the scope here, but a few points are worth highlighting. First, gentrification is about migration – the movement of people – into central-city locations most typically because of closer proximity to work (London et al. 1986; Aoki 1993). Second, these 'gentrifiers' are part a 'new middle class' comprised of high-earning, professional, and consumer-driven individuals (Smith 1987; Griffin 1996). Third, gentrification has consequences for incumbent residents who are pushed out via lease termination, increased taxes, escalating rents, or building code citations (Gale 1985). Often, as Dubin (1993) argues, the zoning changes and redevelopment strategies that champion upscale residential development facilitate the displacement of long-time residents who are rendered as undesirable by planners and investors. Finally, the literature debates the reasons and causes for gentrification. There are many explanations for this migration, including traditional economic explanations that cite the rising costs of

living in the suburbs and the associated transportation costs that push residents to seek homes closer to work. Other explanations include cultural approaches that see gentrification as a way for individuals to showcase economic success or modern style as expressed through the revitalization of historical districts (Aoki 1993).

Alternatively, political-economic explanations based in the Marxist perspective – most eloquently forwarded by Neil Smith (1979)—have pointed to the 'rent gap' theory to explain the forces behind gentrification and patterns of capital investment and disinvestment in the built environment. Smith defines the rent gap as "the disparity between the potential ground rent level and the actual ground rent capitalized under the present land use" (Smith 1979, 545). The distinction between the value of land, as separate from the value of the structure built upon it, explains why investors may neglect some neighborhoods and invest in others. As Griffith notes, "the rent gap offers an opportunity for profits in many of these slum areas, and efforts have been made to entice the middle classes back to them" (1996: 242). The rent gap is closed by gentrification, and in the process investors make a considerable profit. The rent gap theory explains that gentrification is "most likely to occur in areas experiencing a sufficiently large gap between actual and potential land values" (Smith 1987: 464). Gentrification, therefore, does not happen randomly to low-income neighborhoods; it happens when capital speculates that more rent can be obtained from a location through a different land use or redevelopment.

The Marxist approach to gentrification places it in the context of larger market-based and capital processes that restructure urban space. According to Neil Smith and David Harvey and others in the critical perspective, gentrification is just one local

occurrence of a process of urban metabolism structured by the rules of capitalism. Banks and investors make calculated decisions to close the rent gap in the inner city by redeveloping old buildings and or developing on vacant land in order to avoid crises of accumulation and make a profit. One notable example of this process is the conversion of industrial warehouses into luxury loft apartments.

If we link Smith's rent gap analysis with Harvey's take on urban metabolism and flow of investment capital, we can estimate the necessary conditions – and therefore the timing – of gentrification. As Smith suggests, gentrification and the influx of capital into the central city is correlated with the crisis of accumulation and declining rates of profit. Harvey discusses these factors in more detail – and this is more explicitly examined below – and notes that capital will invest in the built environment in order to recover profits. Linking gentrification to capital flow in the urban metabolism in this way provides both a theoretical foundation and allows us to make best guesses at when gentrification will occur based upon the conditions of the market. The type and location of food retail options, Bedore argues, are the result of capital formation and rescaling over time. Her findings suggest that the physical and spatial accessibility of food retail has declined in relationship to the capitalization of the rood retail sector (2013: 133). Rather than rely on analysis of capital alone, Bedore explores the patterns of the food retailing industry and suggests that processes such as industry consolidation, time-space compression, and appropriation of market share have rescaled and consolidated food retailing (2013: 136). The result is fewer food retail stores exist, period, and the locations of those stores map onto existing geo-spatial race and class inequalities.

Furthermore, gentrification is aided in part by federal, state, and local policies. For example, the Urban Homesteading Program of the US Department of Housing and Urban Development facilitated the gentrification of neighborhoods in New York City in the early 1970s (Lees and Bondi 1995; Lees and Ley 2008). Public resources have also been used to redevelop post-industrial landscapes, such as brownfields and waterfronts, into more profitable land uses and often with the aide of public-private partnerships (Lees and Ley 2008). As Beauregard (1985) notes, local governments are overburdened by the demands of services made by low-income neighborhoods and restrained by the meager tax revenues those residents produce. Because of this, gentrification is often seen as way for local governments to replace low-income-high-service-demand residents with high-income residents who bolster city tax revenue and depend less on public services.

Redevelopment has meant the displacement of black and low-income residents and the replacement of upwardly mobile classes, and consumers, that are seen as economically self-sufficient and viable - and good consumers. Since 1960, Atlanta's powerful business and political interests have reshaped the downtown area using this mold. In each project of neighborhood redevelopment and rebranding, private-sector actors and political leaders have coalesced around the displacement of long-time residents in favor of upwardly mobile residents -- all while using federal housing and tax programs (Vale 2013: 151). In this way, Atlanta's model demonstrates how federal, state, and local tax funds can be used to favor high-end development initiatives that provide profits for investors and upscale homes and amenities for middle-class professionals and consumers, all the while leaving Atlanta's poor and low-income residents without recourse.

Yet, the state and the market do not negotiate gentrification and redevelopment alone – people intervene in the process. As Freeman points out, "the world does not cleave neatly into greedy capitalists promoting gentrification and community activists resisting it" (2008: 190). To the contrary, resistance to gentrification has included establishing limited development zones that prevent development that would cause displacement (Marcuse 1985), establishing firmer rent-control mechanisms (Durham and Sheldon 1986), and collective action organizing (Robinson 1995). The push and pull between new and incumbent residents over redevelopment strategies can in some ways be a false dichotomy. As McGee's (1991) study on gentrification in the African-American neighborhood of West Adams in Los Angeles illustrates, incumbent residents were torn between gentrification's promise of less violence and improved city services and the feeling of being exploited and losing control over their neighborhood. These studies show how people too influence the shape and direction of gentrification and redevelopment.

Finally, gentrification and redevelopment also shape retail and commercial outlets, including food retail. Indeed, the new middle class of professionals who inhabit gentrified neighborhoods demand specific consumption experiences and expectations that too shape the food retail environment of the neighborhood (Beauregard 1986; McDowell 1997; Zukin 1990). Consumption practices help this new middle class publicly declare and solidify their distinctive identity (Jackson & Thrift 1995; Ley 1997). Therefore, retail spaces in gentrified neighborhoods – like shopping centers, department stores, supermarkets, and main streets – represent more than the exchange of commodities, they also suggest the identities, values, and social position of consumers (Bridge and Dowling 2001: 95). For example, in May's (1996) study on inner-city London residents, although

residents liked the availability of exotic food from other cultures, they did not want cross-cultural physical contact with the people of those cultures. In May's study, this negotiation of retail spaces reaffirmed the Anglo-centric identities of those residents. Bridge and Dowling's (2001) study of retail spaces in gentrified neighborhoods concluded that food and gentrification are intricately linked. Gentrified neighborhoods in their study commonly contained 'ethnic' cuisine, coffee shops, supermarkets, and specialty 'boutique' food shops. These retail spaces help gentrifiers maintain consumption practices that are classed and particularly reflect the ways in which "the middle classes are more concerned with fitness and 'healthy eating' (Bridge and Dowling 2001).

However, as Wrigley, Guy, and Lowe (2002) demonstrate, investors and planners are also responsible for pushing particular retail stores – especially supermarkets – as part of their redevelopment plans. Their study uses a major retail redevelopment project in the United Kingdom as an example and asks how partnerships between 'big box' retailers, local authorities, government agencies, and community groups are used as devices to get stores approved and built by planners. In taking this approach, Wrigley, Guy, and Lowe find that the traditional retailer's agenda – centered on carrying out large store urban regeneration plans – is increasingly being challenged by other redevelopment plans using more community-oriented, small, and "appropriate" retail forms. Subsequently, Lowe's (2005) study of the West Quay shopping center in Southampton, UK demonstrates how planners and local officials actively align with large retailers in order to generate successful urban regeneration projects.

Rather than isolating supermarkets as profit-seeking entities, this analysis places

supermarkets within the process of urban change that follows a set of rules and values set by the market economy. Urban change is guided in large part by a set of values, principles and priorities defined by our main economic system, capitalism. As a system, capitalism is guided by two key principles: (1) accumulation, or the tendency for the capitalist class to reproduce itself in the search for expanding profits, and (2) class struggle, or the domination of labor by the capitalist class (Harvey 1985). These principles guide exchange and consumption in distinct economic spheres. The first sphere of capital includes cycles of production, consumption, and reproduction of goods and labor (what is typically thought of as 'industry'). Accumulation guides the practice of this sphere of economic activity, but it also drives the system into crisis by either overproducing commodities, which decreases the rate of profit, or by creating conditions where there is either little opportunity for profitable investment or the lack of capital to make investments.

Once the crisis of accumulation occurs in the first sphere, capitalists turn to the second sphere to generate profit using what Harvey calls the 'spatial fix' (1985: 25). The second sphere of capital includes the investment in fixed capital - either in machinery and tools or in physical structures that are used to aid the production process. Because fixed capital is built, investment in this type of capital "entails the creation of a whole physical landscape for purposes of production, circulation, exchange, and consumption" (Harvey, 1985: 6). In other words, capitalists invest in and develop the built environment to fix the crisis of accumulation they experience in the first sphere (Harvey, 1985: 7). Later on, however, these structures become devalued capital like abandoned warehouses, old factories, and deteriorating infrastructures. Devalued capital acts as physical barriers for

new capital investment and future accumulation. The result is that some neighborhoods are left with devalued capital that deters capital investment. The extent to which this devalued capital prevents redevelopment and capital investment is direct correlated with the rent gap. The UPE perspective demonstrates how capital invests in a neighborhood through building physical structures, accumulates profit until a crisis in profit is reached, and then seeks investment elsewhere leaving behind devalued capital that discourages new investment and promotes the development of food deserts. McClintock's (2008) study on the relationship between industrial capital and racialized urban planning in Oakland, CA demonstrates how capital spatially concentrates and eventually loses its value, leaving behind food deserts in the process. McClintock's work is encouraging for scholars who see the linkages between power, capital, and the production of food vulnerabilities in post-industrial societies. It also begs the question of comparisons – in what ways are these observed processes true for other post-industrial cities like Atlanta?

Atlanta's own 'spatial-fix' practices have produced pockets of abandoned warehouses, the demolition or abandonment of the city's public housing stock, deserted rail-tracks, and vacant run-down homes (to name a few). True to Harvey's analysis, urban capital has found areas of investment that have redeveloped some of these spaces from devalued capital into profitable ventures. For example, the city (in partnership with private investors and developers), transformed an old power station in the Reynoldstown/Edgewood neighborhood into a mixed-use shopping center complete with market-rate condos, big box retail stores, and a 24-hour supermarket. Across town in the west side, the old Atlanta Steel Mill was developed into Atlantic Station, a multi-billion dollar neighborhood with market-rate housing, luxury condominiums, office space,

entertainment, and retail outlets, and a supermarket. These examples emphasize two important points. First, capitalism moves investment capital around the urban landscape and invests in redeveloping spaces in order to fix a crisis in accumulation. Second, supermarkets are often tied to spatial fix practices that include housing and retail development (Wrigley, Guy, and Lowe 2002; Lowe 2005).

Focusing on the system of capitalism and its spatial patterns also provides the opportunity to investigate food retail and its relationship to the urban built environment. By 'food retail' I refer to physical structures that distribute and market food to consumers including supermarkets, grocery stores, and convenience stores. In particular, we can understand urban food vulnerability as a result of how capital invests (or disinvests) from specific geographic places at specific times, including supermarkets. This investigation includes, as Melanie Bedore points out, capital's "uneven penetration in local economies, the extent of its concentration and consolidation, and its impact on the local built environment" (2013: 134). That is, food retailing is also influenced by the flow of capital in urban areas, including how capital engages in processes of 'spatial fix' and closing the 'rent gap' in the process of gentrification. As a result, capitalism exacerbates racial inequalities across the urban landscape and influences which communities experience supermarket development or urban food vulnerabilities.

In the same vein, Sarah Dooling and Gregory Simon's (2012) urban vulnerability framework connects the rent gap theory and spatial fix practices of capital to questions of race, class, power, and historical legacies of oppression. While there is still a lot more work to be done for UPE to grapple with and clarify an epistemological framework that integrates these questions, Dooling and Simons' collection is a useful starting point. The

collection of works demonstrates the conceptual and analytical openings provided by the lens of vulnerability, which the authors see as a provocative way to understand the recursive and dynamic processes that influence the creation, regulation, and manipulation of urban vulnerability, alongside social inequalities and resistance to these conditions.

Ultimately, capital generates urban food vulnerabilities in concert with historical and structural systems of inequality, namely racism and capitalism. Spatial fix practices interact with and reproduce dynamics of class struggle and racial segregation. Indeed, capital does not act alone. Political leaders, urban planners, and developers manage capital investment and disinvestment. As Bedore (2013) points out, spatial fix practices are managed and legitimized by urban politics. If the closing the rent gap is a significant condition for gentrification and part of capital's predictable spatial fix, as Smith, Harvey and others in the UPE school of thought suggest, then this study bears the burden of demonstrating that this process is true for Atlanta in two ways. First, that supermarket location is positively correlated with gentrification. In other words, closing the rent gap through spatial fix practices increases the odds that a neighborhood will have increased access to food retail. Second, that in both political decisions regarding gentrification and redevelopment as well as community-led campaigns to influence local urban change, you will find food retailing as part of the discussion in some way. In other words, food retailing and the location of supermarkets is a subject of debate and discussion when it comes to urban change at both the policy and community level. While I have so far explained the theoretical positioning behind the former assertion, I have yet to delineate how I see the interaction of policy makers, residents, and food deserts. To do this, I bring in perspectives from the fields of urban history, urban politics, and social movement

theory.

Conclusion

Food Deserted: Expanding the Food Desert Concept

These theoretical perspectives, when used to understand Atlanta's historical development and the shaping of food vulnerabilities, demonstrate that the use of 'food desert' as a concept to analyze neighborhoods that lack access to fresh, healthy, and affordable food is limited. Framing food access and vulnerability issues in this way ignores that food access is tied to entrenched histories of racism and capitalism – systems that have intentionally developed concentrations of poverty and racial segregation. The limited scope of food deserts as a concept fails to give any indication of the processes and patterns behind the inequalities in food access. It also constrains the solutions available to solve the problem. As Shannon (2013) explains, current research trajectories have 'fixed' food deserts by narrowing our understanding of food access to supermarket sites only, by using political boundaries as 'fixed' neighborhood definitions rather than the people that reside in those neighborhoods making that distinction, and by 'fixing' those residents as passive subjects acted upon by the built environment. Additionally, by increasing the opportunities for consumers to purchase food, the food desert problem sees supermarkets as the answer to better health, less obesity, the formation of responsible body citizens that are seen and understood as healthy. In this frame, the problem is focused on the presence of an obesogenic environment rather than the structural and historical processes that produce and shape that environment.

For all the theoretical and conceptual pitfalls of 'food deserts' as a tool, this

chapter has introduced several theoretical perspectives that can be used to analyze food vulnerability. A renewed look at food deserts that takes into account social structures and historical legacies of disinvestment and oppression is captured most adequately in transforming 'food deserts' – a noun – into 'food deserted," as adjective that describes the conditions that people reside in.

The concept of food deserted does three important things. First, it focuses on the people of a neighborhood and therefore draws attention to the connection between their personal experiences as non-white and poor to the structural considerations of racism and capitalism. Food deserted people are disproportionately non-white and poor. Additionally, by placing our focus on the people, the concept of 'food deserted' is movable along with the people it describes. Therefore, if a neighborhood lacks food access, and spatial fix practices of investment capital "fix" the problem by redeveloping the neighborhood and bringing in new residents alongside new retail shops, the concept of food deserted can follow those that are displaced and not get trapped into the conclusion that just because the built environment is 'fixed' by investment does not mean that the people who have been displaced are invested in. Second, the food deserted concept allows for a historical analysis of investment and disinvestment, one that considers change over time. It invites probing questions such as: are those people and neighborhoods that are food deserted always experiencing food vulnerability, when does change to food access occur, and under what conditions? Third, the concept of food deserted opens up the question of what processes and structures give rise to food deserts. In this way, we can bring in the insights from UPE, political-economy, and social movement literature to explain not only the structures that shape the political and

economic conditions of the city but also how people respond, resist, and negotiate that change.

These theoretical threads treat food deserts as a function of racism and capitalism. Food deserts and food vulnerabilities are the other side of that equation and are inscribed on the urban landscape in the form of inadequate access to food. Therefore, understanding food deserts does not require a focus on race or class but on racism and capitalism – systems and structures with values and rules that have patterns and some measure of predictability. In particular, these theories emphasize the importance of looking at the movement of capital in the urban core. Investment of capital can facilitate urban change and shifts in the built environment - including where supermarkets are opened and closed. Additionally, political stakeholders shape how the state shapes and influences key decisions around residential segregation, public infrastructure and transportation, and public investments. Finally, the locations of supermarkets in the urban landscape are also the result of processes occurring internally within the food retailing industry and the decisions made around profitability and the current and perceived consumer base. The next section outlines the methods used to answer the main research questions and to test the hypotheses in the matrix.

CHAPTER 3

MIXED METHODS APPROACH TO STUDYING FOOD DESERTS

The core research question of this study – what demographic and economic factors have influenced the development of Atlanta's food deserts from 1980 to 2010 – is answered using a sequential mixed methods research design. This design approach is based firmly on the literature (Creswell and Clark 2007; Creswell 2009) and also provides the opportunity to integrate the theoretical positions outlined in the previous chapter in methodologically sound ways. Ultimately, the mixed methods design I employ is equipped to rigorously negotiate the complexities inherent in researching urban food vulnerabilities.

This chapter is divided into three parts. First, I explain the field of mixed-methods research design and the fundamental components of the approach. I employ a typology of mixed-methods research in order to elucidate the particular design I employ. Second, I explain each element and component of the mixed design in more detail and examine both the quantitative and qualitative approaches used in the sequentially in the study. In these sections, I explain the data collected, operationalization of terms, analytical approaches and software used, as well as the modalities of interpreting and validating findings. Finally, I end this chapter with an exploration of the limitations inherent in this study.

Mixed-Methods Research Design

In contrast to monomethod designs that are exclusively qualitative or quantitative, mixed-methods research "involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon" (Leech and Onwuegbuzie 2009: 267). Mixed research can occur in any stage or component of the research process including the research objective (for example, exploring a phenomenon or predicting it), the type of data used and the method operations employed, the type of analysis used to explain the data, and the types of inferences made (Leech and Onwuegbuzie 2009; Creswell 2009). In mixing methods, this research approach "draw[s] from the strengths and minimize[s] the weaknesses of both [quantitative and qualitative methods]" (Johnson and Onwuegbuzie 2004: 14). In this way, this approach moves away from often analytically unhelpful and strict purist positions that pit one method against the other and towards a more integrated approach. Ultimately, though, the best method is the one most equipped to answer the research question; and, as I explain below, mixed methods is the approach most suitable for this study.

Leech and Onwuegbuzie (2009) have put forth a typology of mixed-methods designs based on three dimensions, which help explain the approach used in this study. Their analysis suggests that there are three main components to mixed-methods design: the level of mixing methods (fully mixed or partially mixed), the timing of the methods (concurrently or sequentially employed), and the emphasis placed on each approach (for example, does one method have more explanatory weight over another). In a mixed

methods project, qualitative and quantitative methods are used at different stages of research and can be employed sequentially or concurrently. In a fully mixed methods design, qualitative and quantitative methods are mixed at one or multiple stages of research. For example, a fully mixed design would employ both qualitative and quantitative to identify larger trends of a phenomenon, use both methods to analyze more detailed data or case studies, and use both methods to infer or predict future occurrences or trends. In comparison, in partially mixed methods design the two methods are used either concurrently or sequentially and then mixed at the data interpretation stage (Leech and Onwuegbuzie 2009: 267). For example, this study uses partial mixed design in that it uses quantitative methods to identify larger trends, qualitative methods to investigate those trends on a local level, and uses both methods to draw conclusions about all observations.

Additionally, the emphasis placed on the methods used is an important element in mixed-methods design. This consideration "pertains to whether both qualitative and quantitative phases of the study have approximately equal emphasis (i.e. equal status) with respect to addressing the research questions(s), or whether one component has significantly higher priority than does the other phase (i.e. dominant status)" (Leech and Onwuegbuzie 2009: 268). Morse (1991) developed a notation system that uses capitalization to denote which method is emphasized in the design (QUAN or QUAL for emphasis, and alternatively quan or qual for de-emphasis). For example, this study uses a dominant status design in that initial trends are identified using quantitative methods but the weight of explanatory power is given to the qualitative method to investigate how valid those meta processes are on a local level. In this way, the qualitative method is

dominant over the quantitative method because the qualitative analysis can either prove or disprove what is found quantitatively (but not the other way around).

Relatedly, the sequencing and emphasis elements in mixed methods design address concerns of triangulation. As Morse points out, methodological triangulation "is the use of at least two methods, usually qualitative and quantitative, to address the same research problem" (1991: 120). When a research question is as complex as the one undertaken in this study, relying solely on one method can be inadequate. Mixed methods can be used to address this limitation by either simultaneous triangulation or sequential triangulation. Simultaneous triangulation uses "qualitative and quantitative methods at the same time" in ways that limit the interaction of two or more datasets during the data collection and analysis (Morse 1991: 120). Triangulation between both sets of data and findings is then explored at the analysis stage of the research process. Alternatively, in sequential triangulation, the "results of one method are essential for planning the next method" and one method is completed before the next method is begun (Morse 1991: 120). In the mixed-method research design for this study, simultaneous triangulation is achieved by using the findings of the first quantitative stage to choose two case study sites for the second qualitative stage. Additionally, the results from the case study analysis will be used to question the trends identified in the quantitative stage.

The typology of mixed methods research design developed by Leech and Onwuegbuzie is reproduced in Figure 1. Additionally, the components shaded in gray denote the mixed-method design approach used specifically in this study. First, this study uses a partially mixed methods design because it employs quantitative and qualitative methods separately from each other in two distinct phases. Second, the time dimension

used in this research design in sequential because quantitative methods are used first to get a broad understanding of the data and larger trends present in the development of unequal food access in Atlanta from 1980 to 2010. This is followed in a sequential manner by a qualitative analysis of two neighborhood level case studies: Pittsburgh and Old Fourth Ward. Third, the study has a dominant status dimension that emphasizes the explanatory power of the qualitative findings of the case studies. In short, quantitative methods are *not* used here to exclusively explain the patterns of food vulnerabilities. Instead, quantitative methods are used to set up the context over the past thirty years and the spatial and demographic trends related to the development of food vulnerabilities, while qualitative methods are relied upon to illustrate a local-level analysis and to find ways in which neighborhood experiences mimic or diverge from the quantitative trends. Thus, the study involves two phases that occur sequentially with the qualitative phase having greater emphasis. Following the typology developed by Leech and Onwuegbuzie, the type of mixed method design used by this study is Partially Mixed Sequential Dominant Status Design (P4).

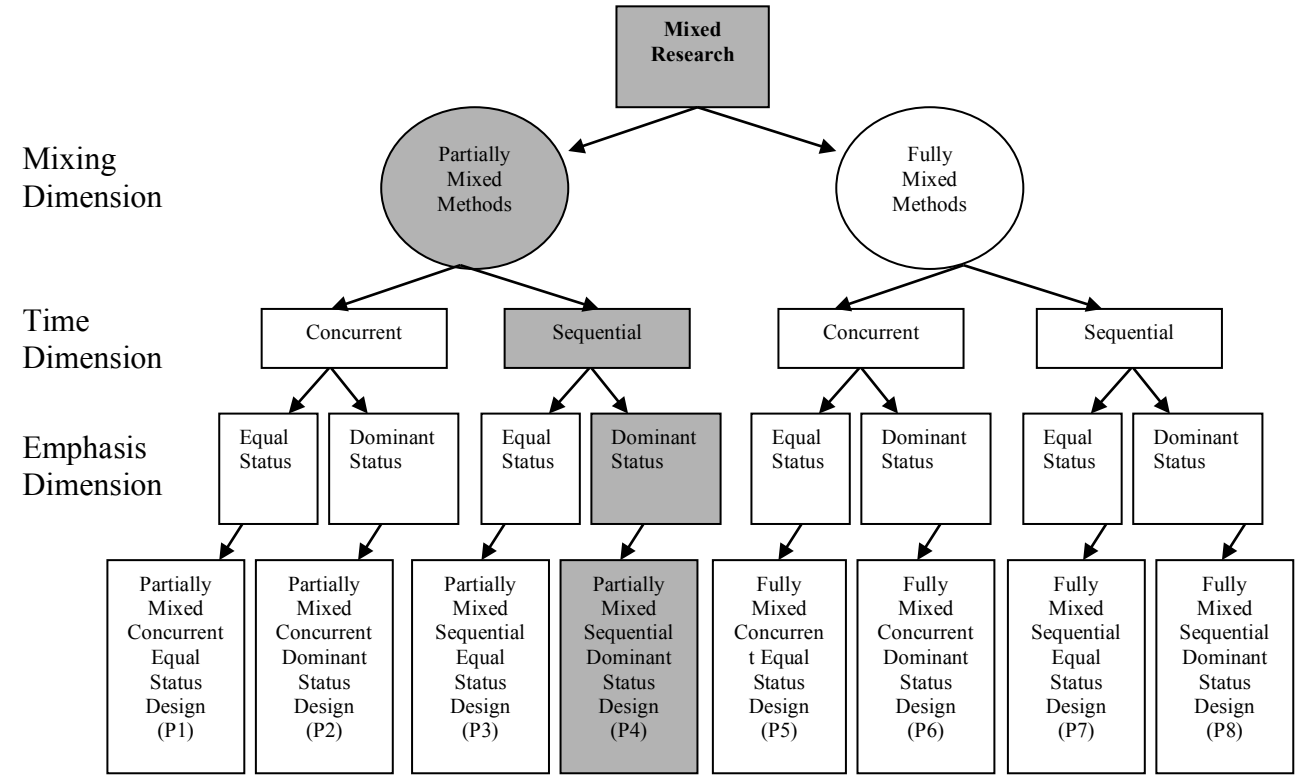

Figure 1 Typology of mixed-method design developed by Leech and Onwuegbuzie

This research uses Partially Mixed Sequential Dominant Status Design in the following approach (see Figure 2). The first method in the sequential design is quantitative and used to understand demographic and spatial trends of food vulnerable neighborhoods in Atlanta form 1980 to 2010. This quantitative part contains four nested elements. First, quantitative methods are used to identify food deserts in Atlanta in the years 1980 and 2010 using the food definition provided by the United States Department of Agriculture, supermarket data from the Mergent Database and City of Atlanta business directories, as well as demographic data from the United States Census. Second,

geospatial statistical methods are used with geographic information systems software to identify statistically significant spatial trends between 1980 and 2010. Third, descriptive statistics are used, along with analysis of variance and two-sample t-tests, to explore statistically significant demographic trends over time. Fourth, a logit regression model is used to identify the odds ratio of independent variables on the dependent binary variable of whether a low-income census tract is a food desert or not.

The results of the quantitative data analysis collected in the first phase of the research project are used to identify comparative case study sites for the qualitative phase of the research project (Creswell and Clark 2007: 144). Fundamentally, the second qualitative phase asks, "what results from the quantitative analysis will be followed up on in the qualitative phase" (Creswell and Clark 2007: 144). This type of explanatory mixed methods design is well suited for building upon initial quantitative results (Creswell and Clark 2007) and is particularly good for when a researcher "needs qualitative data to explain significant (or non significant) results, outlier results, or surprising results" (Creswell and Clark 2007: 72; Morse 1991).

The qualitative phase of the research design is used to understand how investment capital, the influence of urban political regimes, and community organizations have shaped food access in historically black neighborhoods in Atlanta from 1980 to 2010. This phase involves selecting two case study sites from neighborhoods identified using the quantitative data analysis. Two sites are selected – one a food desert, one not a food desert – in order to compare how the independent variables (capital, governing regimes and coalitions, and community organizations) have produced two different outcomes. Data for each of the two neighborhood sites was collected including neighborhood

planning unit meeting minutes, newspaper articles, historical documents from neighborhood organizations, and redevelopment plans. This data was analyzed using qualitative content analysis and used to understand the relationship between the independent variables of capital investment, governing regimes, and social movement actors in the production and maintenance of urban food vulnerabilities on the local scale.

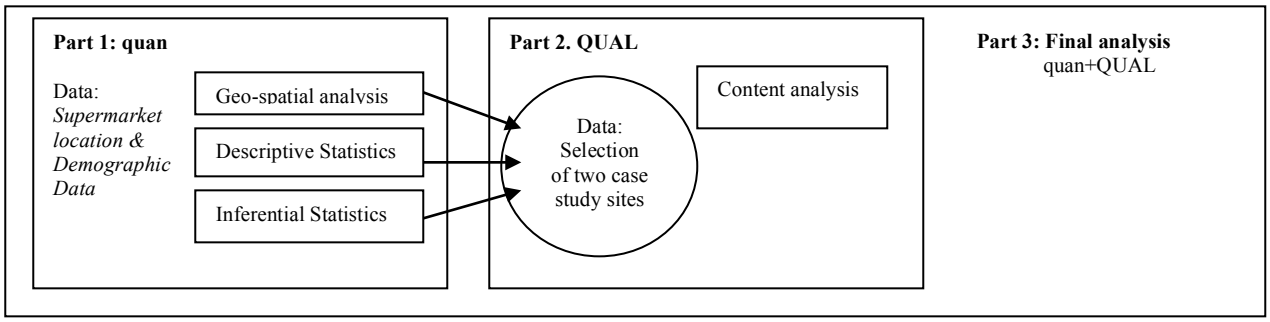

Figure 2 Mixed-methods study design

The qualitative phase of this study relies on case study design. Case-study research methodology is defined by Yin (2009: 18) in two parts. The first part defines the case study as an inquiry that examines a contemporary issue "within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." Studying the phenomenon in its context ensures that the context itself is under investigation. This is important because my theoretical framework understands food deserts as a product of social processes embedded in the context itself. Because this research attempts to gain an in-depth understanding of the real-life phenomenon of food deserts, the case-study method is necessary for its ability to understand the causal processes that make up the

context in which food deserts exist in ways that an experiment or surveys fail to capture. Secondly, Yin defines the case-study as a method that

> "relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and [a method that] benefits from the prior development of theoretical propositions to guide data collection and analysis" (18).

The data points and theoretical propositions that frame this research method are explained below in greater detail. The important point here is that the case study method is one that is flexible enough to attend to multiple variables as determined by the theoretical orientation.

Finally, the third part of the research design is analysis of all data with an emphasis placed on qualitative findings (denoted by the capitalized "QUAL" in figure 2). Each of the components in the mixed-methods design is explained in greater detail below.

Part 1: Quantitative

Data

The first method in the sequential design is quantitative and helps describe how demographic and spatial trends have influenced the development of food vulnerable neighborhoods in Atlanta form 1980 to 2010. In the first part of the research design, quantitative methods are used to identify food deserts in Atlanta in the years 1980 and 2010. I obtained supermarket location data for 2010 was obtained from the Mergent Million Dollar Database on business and industries using the standard industry code for supermarkets. Supermarket addresses were obtained from the City of Atlanta Directory for the year 1981 and filtered using the list of Progressive Grocer's 1981 annual supermarket analysis on top supermarket chain annual sales. These addresses were

geocoded using ArcGIS Desktop 10 and spatially joined to demographic data. The independent variables per census tract included in this analysis are:

- Median household income (standardized in 2010 US dollars using the Consumer Price Index per census tract)
- Percent of housing units vacant (number of vacant units divided by count of units per census tract)
- Percent of population minority (non-Hispanic white population subtracted from total population divided by total population per census tract)
- Percent of unemployed (number of unemployed persons ages 18 – 65 divided by total civilian labor force per census tract)
- Percent of population below federal poverty line per census tract
- Population density (per sq. acre per census tract)

Census tract cartographic boundary files in shapefile format were obtained from the United States Census website.

Definitions

This study uses the 2010 United States Department of Agriculture definition for food deserts in order to make comparisons with other data and analysis produced. The USDA defines a food desert as "low-income areas where a significant number or share of residents is far from a supermarket, where "far" is more than 1 mile in urban areas and more than 10 miles in rural areas" (USDA 2013). A "significant" share of residents was defined as at least 1/3rd of the tract population residing more than one mile from a supermarket.

As explained above, supermarket was defined as a business with standard industry code for supermarkets (54110) in 2010. For the year 1980, the 1981 City of Atlanta Directory for "grocery" was used ("supermarkets" was not a category). These definitions

resulted in a sample of 33 supermarkets for 1980 and 35 supermarkets for 2010 within the political boundaries of the City of Atlanta.

The geographic scale I use to define a neighborhood is a United States census tract within and adjacent to the political boundaries of the City of Atlanta. A census tract is a "small, relatively permanent subdivision of a county that generally contains between 1,000 and 8,000 people, with an optimum size of 4,000 people" (Economic Research Service 2013). I obtained economic, demographic, and census tract boundary data from a longitudinal database of census data compiled by Logan, Xu, and Shultz that corresponds to 2010 tract boundaries (2012). For ease of comparison, I used 2010 census tract boundaries for both years in the study. For each year, 166 census tracts were used that fell within or adjacent to the City of Atlanta political boundaries, totaling 332 census tracts for both years.

A census tract was defined as low-income if it had a poverty rate of 20 percent or higher, or a median family income at or below 80 percent of the area's median family income. More specifically, low-income was defined as a census tract with a poverty rate greater than or equal to 20 percent, or median family income less than 80% of the metropolitan area. For 2010 data, the median family income per census tract was $43,671. For 1980 data, the median family income per census tract was $12,483.91. So, if a census tract had less than 80% of 2010 median family income ($34,936.8)[5] or less than 80% of 1980 median family income ($9,987.12), then it was designated as low-income.

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[5] The amount used in the calculation of 1980 low-income census tracts is not standardized using the Consumer Price Index. Because the calculation was used only to identify low-income census tracts in the same year (and not across years in a comparative analysis), this decision was deemed to have no effect on the calculation.

A low-income census tract was then also defined as a food desert when at least one third of the tract's population resided more than one mile (Euclidian distance) from a supermarket or large grocery store (Economic Research Service 2013). Using this definition, 79 and 85 low-income census tracts were found for 1980 and 2010 respectively (totaling 164 tracts). Out of this 164, a total of 17 food desert tracts were identified for 1980 and 54 tracts were labeled as food deserts for 2010.

Methods and Procedures

There are five overall procedures within the quantitative research phase. They include preparing the data for analysis, exploring the data, analyzing the data, representing the data analysis, and validating the data. In this quantitative part of the research design, the methods used follow a five-step process:

1. Preparing data:
    a. Data processing, geo-coding, and cleaning
2. Exploring data:
    a. Choropleth mapping and spatial analysis used to identify 2010 and 1980 food desert tracts descriptive statistics for food desert tracts and non food desert tracts for both 1980 and 2010
    b. Mean, standard deviation, standard error, density plots, QQ plots, box plots, x-y plots
3. Analyzing and validating data:
    a. Spatial mean, spatial deviation ellipse, cluster analysis (Getis-Ord Gi*)
    b. Tests for normality and statistical significance
    c. Pearson product-moment correlation coefficient table
    d. Logistic regression to model the odds of a low-income census tract being a food desert
4. Representing the data analysis
    a. Choropleth maps

b. Cluster analysis maps
c. Spatial mean and standard deviation ellipse maps
d. Table of descriptive statistics
e. Table of regression results

5. Validating the data:
    a. Comparing regression models using ANOVA
    b. Comparing results to other studies using similar instruments

These five steps were carried out sequentially primarily because low-income and food desert tracts needed to be identified in step two in order to be used in steps three and four. In this way, the purpose of the design is to use the database from the spatial analysis to inform the database used in the statistical analysis. Later on, the results from this quantitative stage will be used to define what qualitative data is collected for the second phase of this research project (Creswell and Clark 2007: 144). Each of the steps in this quantitative phase is described in more detail below.

To prepare data for analysis, it was checked for errors, outliers, and duplicate values. The primary database was maintained in a Microsoft Excel file. Additionally, calculations were made for variables that reflect percentages. A codebook will be established using data variable descriptions, units, and source of data. Then the data was imported into a database, cleaned, and uploaded into ArcGIS Desktop 9[6]. A personal geodatabase file was created and supermarket locations were geo-coded and spatially joined with census tract data.

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[6] ArcGIS and associated applications are part of a geo-spatial analysis software package produced by ESRI.

To explore the data, geo-spatial methods were used. One map was created for 1980/1981 data and one for 2010 data. Several choropleth maps were created for both years to show and compare the spatial distribution of demographic and economic data including race, income, poverty, vacancy, unemployment, and population density. Additionally, three simultaneous quantitative and geo-spatial methods were used based on the spatially joined data. The first was geo-spatial analysis using ArcGIS software. Specifically, I employed descriptive spatial statistical methods on supermarket location data using spatial mean, spatial deviation ellipse, and cluster analysis. Descriptive geo-spatial statistics, including spatial mean, standard deviation ellipse, and spatial clustering analysis (Getis-Ord Gi*), show the locations of supermarkets in the City of Atlanta in the years 1980 and 2010. Cluster analysis measures statistically significant clusters of high and low counts of supermarkets by census tracts using Z-scores to evaluate the presence of clusters and p-values to assess statistical significance. The spatial mean is a point feature that averages the x and y-coordinates of each supermarket location to illustrate the spatial center of all supermarket locations. The standard deviation ellipse calculates the standard deviation of x and y-coordinates of supermarket locations from the mean center to define the axes of the ellipse. The shape of the ellipse illustrates the overall spatial distribution of supermarkets and suggests if the distribution takes on a particular directional orientation. Finally, I used the USDA definition of food deserts to create two thematic maps of food deserts for 1980 and 2010 and use these maps to draw general conclusions about the spatial patterning of supermarket locations over the thirty-year period.

Descriptive statistical methods were used to explore the differences between food deserts and non-food deserts over time using R, an open-source statistical software package. Specifically, the mean, standard deviation, standard errors were calculated. Additionally, histograms were used to identify the distribution of the data overall. To test for statistical significance between food desert tracts and non-food desert tracts on independent variables, a Welch Two-Sample t-test was performed for each variable.

Finally, using only low-income census tracts for both years (a total of 164 tracts), I employ a Person product-moment correlation coefficient to probe for the strength and direction of interactions among variables. I modeled the relationship between the binary dependent variable of a low-income census tract being a food desert (1 if it is a food desert, 0 if it is not) and independent variables are modeled using generalized linear regression that employs a logit link function to model the odds ratio. The statistically significant independent variables and their odds ratio are analyzed to determine which variables have the greatest influence over whether a low-income census tract is a food desert. Importantly, these models take only low-income census tracts for both 1980 and 2010 and determine which variables are most responsible for turning low-income census tracts into food deserts.

Analysis

The findings from these methods will be explored analyzed in four distinct ways based on the methods used. First, the choropleth maps will be analyzed for the spatial distribution of demographic and economic data including race, income, poverty, vacancy, unemployment, and population density. While these provide only a cursory and visual understanding of the spatial distribution of demographic factors, geo-statistical analytical

methods (spatial mean, standard deviational ellipse, and clustering analysis) provide the statistically significant geo-spatial patterning. The maps with 1980/1981 data will be compared to 2010 maps in order to understand how the spatial patterns have changed over time and where these changes are significant.

Second, the food desert maps created using ArcGIS will provide two sets of specific census tracts and their associated demographic and economic data: the first set is all low-income census tracts and the second set are tracts that are low income *and* designated as food deserts. With this categorization, we can then compare demographic and economic data between 1980 food deserts and 2010 food deserts. Additionally, we can compare non-food desert tracts to food desert tracts for both years. This categorization is useful in analyzing the distribution of data for food deserts and non-food deserts.

Third, using the two groups of food desert tracts and non-food desert tracts, we can compare whether the difference in groups for each independent variable is statistically significant. This is useful in the analysis because while there might be noticeable difference between variables, using a two-sample t-test will help identify only those variables that are statistically different depending on whether or not the tract is a food desert.

Fourth, once statistically significant variables are identified, we can use generalized linear regression to model the probability that a low-income census tract will also be a food desert. We can do this using logit regression with the appropriate data transformations for non-normal variable distributions. Since the dependent variable is binary (1 if a food desert, 0 if not), the results from the regression model will display

statistically significant odds ratios that show the extent to which the odds increase or decrease for one variable (holding all other variables constant).

Finally, the analysis of the quantitative data will be used in the preceding qualitative methods in two ways. First, the major demographic and economic shifts identified will be used to provide the context for local neighborhood experiences with food access. In this way, the quantitative analysis provides the backdrop for major demographic and economic shifts happening in Atlanta throughout the study period. Second, the quantitative analysis will be used to identify two case study sites that share similar demographic, economic, and built environment (railroads, warehouses, residential buildings) conditions but that have different food desert statuses. These case study sites will provide the setting for the preceding qualitative methods section and try to explain why two similar neighborhoods sharing like demographic and economic contexts have different food desert outcomes.

Part 2: Qualitative

Data

Based on the data analysis of the quantitative phase, two Atlanta neighborhoods are chosen as case study sites: Pittsburgh and Old Fourth Ward. Using this small number of sites allows for more detailed comparison. One important consideration for multiple case studies is to emphasize the rationale – or replication logic – for choosing the case study sites (Yin 2009: 54). In this design, both case study neighborhoods of Pittsburgh and the Old Fourth Ward share a common set of characteristics. Both neighborhoods have a majority black residential population; each has mixed land use including residential, commercial, and retail use; both are adjacent to the downtown area

(Pittsburgh is southwest of the city, Old Fourth Ward is east), located on Atlanta's Beltline redevelopment project, and are situated within one mile of a major highway; and both have active neighborhood associations, community-based groups, neighborhood planning units, and city council representation. In contrast, the major difference between these neighborhoods is their food desert designation. The Old Fourth Ward boasts access to at least three chain supermarkets, one farmers market, and one productive urban farm with an active community supported agriculture distribution network. Unlike the Old Fourth Ward, the Pittsburgh neighborhood has access to no major supermarket chains, no farmers market, and one newly erected community garden that at the time of this writing is unable to distribute food.

One notable difference in the long-term trends each neighborhood has experienced over time is redevelopment and the infusion of new capital. The Old Fourth Ward has seen an influx of capital during the 2000s that brought new condos, restaurants, boutiques, and retail space (Rhone 2007: 1FE). These efforts have successfully redeveloped old railway lines and industrial buildings into market rate residential and commercial space. Before the housing bubble burst, affluent residents began moving into the Old Fourth Ward and some homes sold for $900,000, a consequence of the neighborhood's gentrification (Emerson 2007: 3L). By 2007, 3 million square feet of the neighborhood's residential and commercial property was under redevelopment by developers, and many poor and black residents were being displaced (Emerson 2007: 3L). In stark contrast, Pittsburgh has been dealing with investors in a different way and has been notably unsuccessful in redeveloping abandoned factory buildings and rail lines. In 2005, the district's state representative, Dough Dean (D-Atlanta), waged a fight

against investors who were buying homes in Pittsburgh and using them solely as rental property. Dean was concerned with the rise in rental properties in in-town communities because they prevented the "kind of people who want to buy a house and put down roots and invest in building a community" from moving in (Pendered 2005: 1JN). The concentration of abandoned houses, a weak tax base, high crime rates, and inflexible lenders have stymied the initiatives of community housing development organizations (Grantham and Trubey 2012: 1A). Overtime, the Old Fourth Ward and Pittsburgh have experienced capital investment and redevelopment initiatives in completely different ways.

Given the set of conditions these neighborhoods share, and the characteristics of neighborhoods identified in the food desert literature, it is likely that the Old Fourth Ward and Pittsburgh neighborhood would be designated as food deserts. Yet, while Pittsburgh is, the Old Fourth Ward is not. Therefore, the focus of this comparative case study is to find out why -- what unique conditions and patterns -- have produced the theoretical anomaly of the Old Fourth Ward. In identifying these two neighborhoods as case-study sites, I attempt to better understand the complex phenomenon of food deserts in urban areas and to clarify the assumptions of the theoretical framework I employ.

These case study neighborhoods guide the collection of data to be used in the qualitative analysis. I will analyze three main factors for both case study sites that are derived from the theoretical framework outlined in the previous section. They include the market and business actors, the state, and community based groups. The first factor is the role of market actors, specifically supermarkets and developers in the neighborhood. Market actors will be identified in neighborhood redevelopment initiatives, neighborhood

planning unit meeting minutes and agendas, and the number of retail and residential development projects within the neighborhood boundaries within the study period. This includes retail development and the construction and closing of supermarkets in the case study areas.

The second actor is the state and includes the influence of local political regimes, including the Atlanta City Council (in passing zoning laws for retail development, for example), and the partnerships between public and private business entities. This data includes neighborhood planning unit meeting minutes and coverage of development initiatives in the *Atlanta Journal Constitution* and the *Atlanta Business Chronicle.*

The third set of actors in the case study analysis is community groups. Specifically, I focus on the influence of local community organizations in negotiating their local food environment including the conditions that impede or facilitate local food access, and the opening and closing of local supermarkets and grocery stores. This data will be collected from newspaper articles on local activism and neighborhood planning unit meeting minutes.

Methods, Procedures, and Analysis

There are five overall procedures within the qualitative research phase (Creswell and Clark 2007: 129). They include preparing the data for analysis, exploring the data, analyzing the data, representing the data analysis, and validating the data.

1. Prepare the data:
    a. Transcribe text
    b. Digitize documents
    c. Prepare data for analysis in Dedoose
2. Explore the data:

    a. Read through data
    b. Write memos and notes concerning first impressions and themes
    c. Creative qualitative codebook
3. Analyzing the data: *Using Dedoose qualitative software*
    a. Content analysis coding
    b. Assign labels to codes
    c. Group codes into themes/categories
    d. Interrelating themes
4. Representing the data analysis:
    a. Table of themes/categories and counts by case study and document type
    b. Count of co-occurrences of codes
5. Validating the data:
    a. Using qualitative research software
    b. Employing triangulation with quantitative data and peer review of coding scheme

The qualitative data will be prepared by organizing the documents in the qualitative software tool, Dedoose. Text and images from non-digitized sources will be scanned and imported into Dedoose as a PDF document. Text that cannot be imported as a PDF file will be transcribed and imported as a text file. Next, the data will be explored by reading through the data files, writing memos to identify themes and initial impressions, and producing a codebook with data file name, content, and source (Creswell and Clark 2007: 129). To explore the data, all the documents will be read through and memos will be created during the process to record impressions, possible themes, codes, and categories. These memos are equated to what Miles and Huberman call 'marginal remarks,' or notations in the margins of the document that convey "new

interpretations, leads, connections with other parts of the data," that point towards larger questions and issues to investigate during the next round of data collection and/or analysis (1994: 67).

For the analysis stage, each case will be analyzed using the main themes, impressions, and summary statements about what is observed in the data. A coding scheme will be developed capture main themes and categories within the data along with the analytic rationale used to justify the creation of the theme (Yin 2009: 128). Primarily, the codes will follow the theoretical propositions and literature reviewed outlined in chapter 2. Coding is "the process of grouping evidence and labeling ideas so that they reflect increasingly broader perspectives" (Creswell and Clark 2007: 132). Coding involves the division of the text into "smaller units (phrases, sentences, paragraphs), and assigning a label to each unit" (Creswell and Clark 2007: 131). The labels are derived from quotes contained in the documents, a term created by the researcher, or a concept embedded in the theoretical literature (Creswell and Clark 2007: 131). Then, each case dataset will also be evaluated for possible explanations, speculations, and hypothesis about the observed themes. Additionally, alternative explanations and disagreements will be noted. Together, these notes will guide follow-up questions and general directions for further data collection. Finally, these notes will be used to revise and update the coding scheme.

Next, the coding themes and the counts per theme will be analyzed to distill relationships and correlations. This requires a transformation of qualitative data into quantitative data, a functionality provided within the Dedoose software. Transforming qualitative data includes counting codes and the occurrences of codes and generating a

matrix that displays the themes with the "quantitized" qualitative data (Creswell and Clark 2007: 138). Using this transformation, we can analyze the similarities and differences in coding themes between both case study sites and across variables. Finally, the relationships between codes and themes will be analyzed using the theoretical framework to test the hypothesis matrix established at the end of chapter 2.

The analysis will be represented with a discussion of the evidence found for each of the themes used in the coding scheme in order to demonstrate a convincing case that the theme was indeed present in the study. The representation will also include a list of coding themes and occurrences of theme categorized by case. The validity of the data will be established by testing the reliability of the coding scheme using multiple coders to reach agreement on codes for passages of text (Creswell and Clark 2007: 134).

Limitations

There are three major limitations to this research design. First, the case study design has its own set of limitations. In particular, the case study method is well suited for explaining local occurrences for a specific context, but the findings and observations are difficult to generalize to other non-similar cases. Therefore, the findings and data are relevant to the Atlanta neighborhoods under investigation but their implications for other cases outside of those neighborhoods or outside of Atlanta are only best guesses and would need further studies to confirm. Relatedly, because the scope of this project is focused on Atlanta, the analysis cannot address the extent to which the patterns and development of urban food vulnerabilities found in the data are unique to Atlanta or comparable across other cities of similar characteristics.

Secondly, the focus on supermarkets as the primary food retail outlet in both the quantitative and qualitative analysis leaves out other sites of food consumption. In particular, no qualitative data is collected on farmer's markets, community supported agriculture, or small community based markets. This skews the study's understanding of the food landscape in Atlanta broadly. While there is some attention to alternative food distribution networks in the qualitative analysis stage, the data collection – and therefore the subsequent analysis and interpretation – is not oriented specifically to look at these alternative food options. As argued in the previous chapter, this is a limitation that I acknowledge, understand, and make allowances for in order to capture the movement of retail capital in and out of the urban built environment, which more often than not manifests in large format supermarkets. This leaves out a large portion of the food narrative of communities and future studies on the development of Atlanta's urban food vulnerabilities will need to address this gap.

Finally, the quantitative stage only addresses data at two distinct points in time: 1980 and 2010. A more detailed analysis using the geo-spatial and statistical techniques could have included additional data points from within this time period in order to capture the ebbs and flows of demographic and economic changes in Atlanta. There are two reasons why this study does not include data from years in between this time period. First, given the limited scope of this dissertation project and the research questions being asked (which focus on large trends and patterns), it was determined that large scale trends could be adequately captured using data from only the two bookend years. Secondly, the qualitative stage addresses the years between 1980 and 2010 in the context of the case study sites. It was determined that this finer grained analysis using data throughout the

time-period was adequate and better suited for the case study phase of the project. Therefore, while no quantitative data was collected for any year between 1980 and 2000, qualitative data for all years within thirty-year time frame is collected, analyzed, and represented in the study.

CHAPTER 4

THE SPATIAL PATTERNS AND DEMOGRAPHIC CHARACTERISTICS OF ATLANTA'S FOOD DESERTS, 1980 - 2010

Introduction

Up to this point, previous chapters have introduced the complex issue of food access in Atlanta (chapter 1), the theoretical approach used to investigate the socio-historical processes undergirding the development of areas with limited food access (chapter 2), and the methodological tools employed to explore differential food access in Atlanta's neighborhoods (chapter 3). This chapter presents the geo-spatial and quantitative findings of the first part of the mixed-methods approach and discusses the ways in which these findings describes the relationship between demographic and economic variables and food deserts from 1980 to 2010.

In order to more fully describe how food deserts have developed across Atlanta's landscape, this investigation needs to be situated within the changing patterns of demographic and economic characteristics. As historical accounts of Atlanta's development in the 20th century confirm, the city's spatial patterning of racial segregation and concentration of the poor is the result of systemic and structural racism that has guided the city's development (Bayor 1996; Stone 1989; Kruse 2005). Therefore, if Atlanta's racial and economic segregation is not by chance, we are compelled to investigate the issue of food deserts as a phenomenon intricately related to these changing conditions over time. Rather than studying 'food deserts' as a misleading ahistorical

subject, this research project explores the influential demographic and economic factors that have developed, shaped, and managed food access in Atlanta over the past 30 years. Approaching the research question in this way fundamentally challenges the concept of food deserts and its use a static descriptor void of any indication that complex historical forces give rise to unequal spatial patterns of food access[7].

The aim of this chapter is to explore the influential demographic and spatial patterns that have shaped supermarket access in low-income neighborhoods across Atlanta from 1980 to 2010. This is answered more pointedly through four subsequent research questions. First, what are the spatial characteristics shaping food access in Atlanta in 1980 and 2010? Second, what influential demographic and economic factors distinguish census tracts designated as food deserts from other low-income census tracts? Third, how have the demographic and economic profiles of food desert tracts and non-food desert tracts changed over time from 1980 to 2010? Finally, what demographic factors are most influential in determining the odds that a low-income neighborhood is a food desert? The chapter begins with a brief review of the literature on food deserts and contextualizes the topic in the socio-historical landscape of Atlanta. Next, the data and methods used in the stage of the quantitative project are briefly reviewed. Following this, the major findings of the analysis and their implications are discussed. Finally, the

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[7] Recent work has troubled the concept of food desert as a stable and a-historical site of limited food access (Larsen and Gilliland 2008). Studies in this thread have focused more on changes in food deserts over time and the characteristics and factors correlated with this change (Dutko, Ver Ploeg, and Farrigan 2012). This approach intentionally engages the historical processes of disinvestment of particular people who are disproportionately poor and non-white. In many ways, I see this project as an extension of this body of work in that it provides a glimpse into the historical patterns of food access in relation to demographic and economic change over time.

chapter ends with a discussion of the findings and implications for the subsequent qualitative analysis stage in the mixed-methods study design.

Importantly, although the concept of 'food deserts' has been explored, critiqued, and refined in previous chapters (see chapter 1 and 2), I use the term 'food desert' throughout this chapter in order to reference a specific set of measurable characteristics that have been used by the USDA to operationalize the concept. I employ 'food deserts' here to remain methodologically consistent and comparable with previous studies that have explored similar parameters of this issue. In other words, my use of the term in this chapter is intended as a methodological and analytical tool with which to operationalize definitions rather than a conceptual framework to understand socio-historical processes.

This chapter is divided into three sections. The first section provides an overview of Atlanta's demographic profile and how race is spatially distributed across the city in 1980 and 2010. This is meant to set the context for the analysis presented in the rest of this chapter. The second section describes the data and methods used to answer the main and subsidiary research questions. The third section presents the findings and analysis organized by the four sub-research questions. Finally, the last section distills the main findings and conclusions based on the main research question.

Atlanta's Demographic Profile 1980 - 2010

Investigating food access in Atlanta is both important and complex given the historical patterns of race and class dynamics, all of which have spatial dimensions. The forces that have shaped the city into a landscape of pockets of investment and disinvestment – food deserts and non-food deserts – also map onto the social landscape of

race and class. While studies have explicated the historical development of Atlanta's built environment and ideologies of race throughout much of the 20th century (Bayor 1996; Bullard 2007; Kruse 2005), it is important to emphasize that these trends have had *spatial* components.

This section describes three important demographic and economic spatial patterns across Atlanta from 1980 to 2010 in order to set the context for the analysis of food deserts that follows. The three patterns that are described include population density, race, and low-income (as a measure of both percent of the population living in poverty and household income). Together, these patterns underscore the uneven racial and class distribution across Atlanta. Specifically, they illustrate how Atlanta is spatially segregated into areas of majority black and low-income residents to the south and southwest, and areas of majority white and middle to upper class residents in the north.

Atlanta's long history with racial segregation has been well documented (Stone 1989; Bayor 1996; Kruse 2005), and this history ultimately sets the stage for the inequalities evident in the study period. The segregation index in Atlanta increased from 87.4 in 1940 to 91.5 in 1970 as a direct result of efforts to "confine the black community through renewal displacement, public housing, and highway/road barriers" (Bayor 1996: 84). By 1959, blacks represented 35.7 percent of Atlanta's population but were confined to just 16.4 percent of the land (Bayor 1996). Throughout the 1960s, much of Atlanta's metropolitan growth occurred in the northern white suburbs of Gwinnett County (95 percent white), Cobb County (96 percent white), and the suburban section of north Fulton County (99 percent white) (Kruse 2005: 245). Although population density grew in the northern areas of the city from 1980 to 2010 (Figure 3 and 4), the distribution of residents

by race and ethnicity remained concentrated. The thirty-year period between 1980 and 2010 also saw Atlanta's black residents spatially concentrated to the south and southwest areas of the city (Figure 5 and 6). Relatedly, the spatial distribution of low-income[8] neighborhoods across Atlanta has historically mapped onto race, with lower-income census tracts distributed in the south and southwest areas of Atlanta with the exception of extreme southwest tracts of Atlanta that are home to middle and upper-income African-American households (Figure 7 and 8).

In 1980, Atlanta's population was most dense in tracts close to the city's downtown area[9] (where the I-20 and I-75/85 expressway intersect) (Figure 3). Specifically, tracts to the west and east of the north-south expressway had the greatest density when compared to other tracts across the city. Areas closest to downtown and to major expressways had greater population density than areas on the outskirts of the city's boundary. By 2010, however, the majority of the most dense tracts in the soutwest areas of the city lost population (Figure 4). The tracts that experienced significant population growth inclued tracts near Atlanta's midtown neighborhood close to the north-south expressway. Additionally, areas northeast of downtown experienced population growth, as did tracts to the north located along the I-85 corridor. These maps illustrate that population is not distributed equally across Atlanta. From 1980 to 2010, areas to the

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[8] Low-income is defined as a census tract with a poverty rate greater than or equal to 20 percent, or median family income less than 80% of the metropolitan area. For 2010 data, the median family income per census tract was $43,671. For 1980 data, the median family income per census tract was $12, 483.91. So, if a census tract had less than 80% of 2010 median family income ($34,936.8) or less than 80% of 1980 median family income ($9,987.12), then it was designated as low-income.

[9] Throughout this paper, downtown Atlanta will indicate the neighborhoods and areas close to the intersection of I-20 and I-75/85 expressways.

south and southwest of downtown lost a greater share of the city's population. Alternatively, tracts to the northeast of downtown experienced population growth.

In 1980, Atlanta's black population was predominantly in the southwest and south census tracts (Figure 5). In neighborhoods directly south of downtown Atlanta, all tracts were 72.2 percent black or higher. Tracts to the north of the city center were only 18 percent black or less. In 2010, the north-south racial divide had persisted. In some areas to the southwest, the percent of black residents reached 90 percent and above (Figure 6). Notably, tracts that were at least 45 percent black to the east of downtown in 1980 lost a significant share of black residents by 2010. Many of the tracts east of downtown that had 89 percent or more of black residents, had also lost a share of percent black by 2010. This trend overall can be described as a persistence of Atlanta's racial segregation that has the majority of Atlanta's black residents to the south and southwest of the city. By 2010, this concentration of black residents shifted more to the southwest parts of the city and neighborhoods immediately east of downtown experienced a decrease in black residents.

Finally, the spatial patterning of low-income census tracts indicates what is now a familiar north-south divide across Atlanta. In 1980, low-income census tracts were predominantly concentrated near downtown, to the south of downtown, and alongside the east-west corridor of I-20 (Figure 7). By 2010, however, the pattern shifted. Low-income census tracts further intensified and concentrated in the areas south of the city (Figure 8). In addition, some tracts to the east of downtown that were low-income in 1980 were no longer low-income in 2010. Overall, the spatial patterning of low-income tracts illustrates a concentration of low-income indicators (poverty and household income) that is similar to the patterns identified for the percentage of black residents. That is, low-income

indicators map on top of the concentration of black residents, and suggest that race and class are strongly correlated in their spatial distribution.

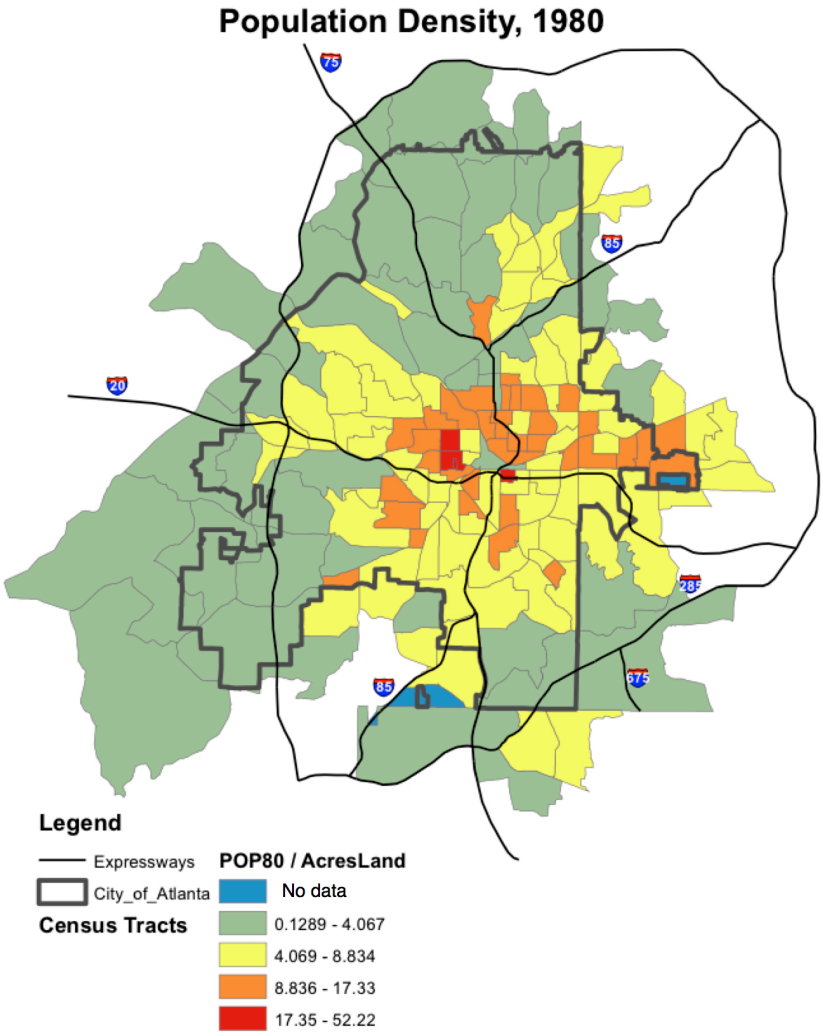

Figure 3 Population Density, 1980[10]

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[10] Source: Data from US Census as compiled by Logan, John R., Zengwang Xu, and Brian Stults. 2012. "Interpolating US Decennial Census Tract Data from as Early as 1970 to 2010: A Longitudinal Tract Database." Professional Geographer, forthcoming. Computations completed using ESRI ArcGIS Desktop 10.

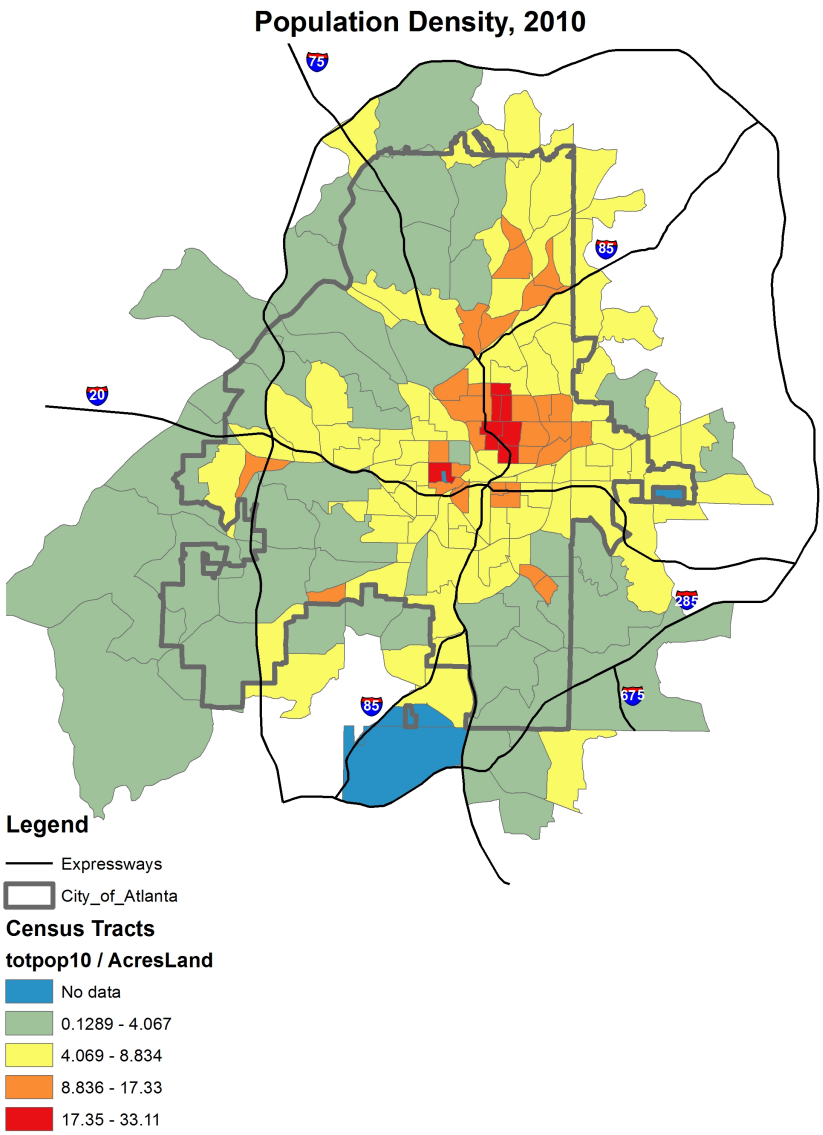

Figure 4 Population Density, 2010[11]

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[11] Source: Data from US Census as compiled by Logan, John R., Zengwang Xu, and Brian Stults. 2012. "Interpolating US Decennial Census Tract Data from as Early as 1970 to 2010: A Longitudinal Tract Database." Professional Geographer, forthcoming. Computations completed using ESRI ArcGIS Desktop 10.

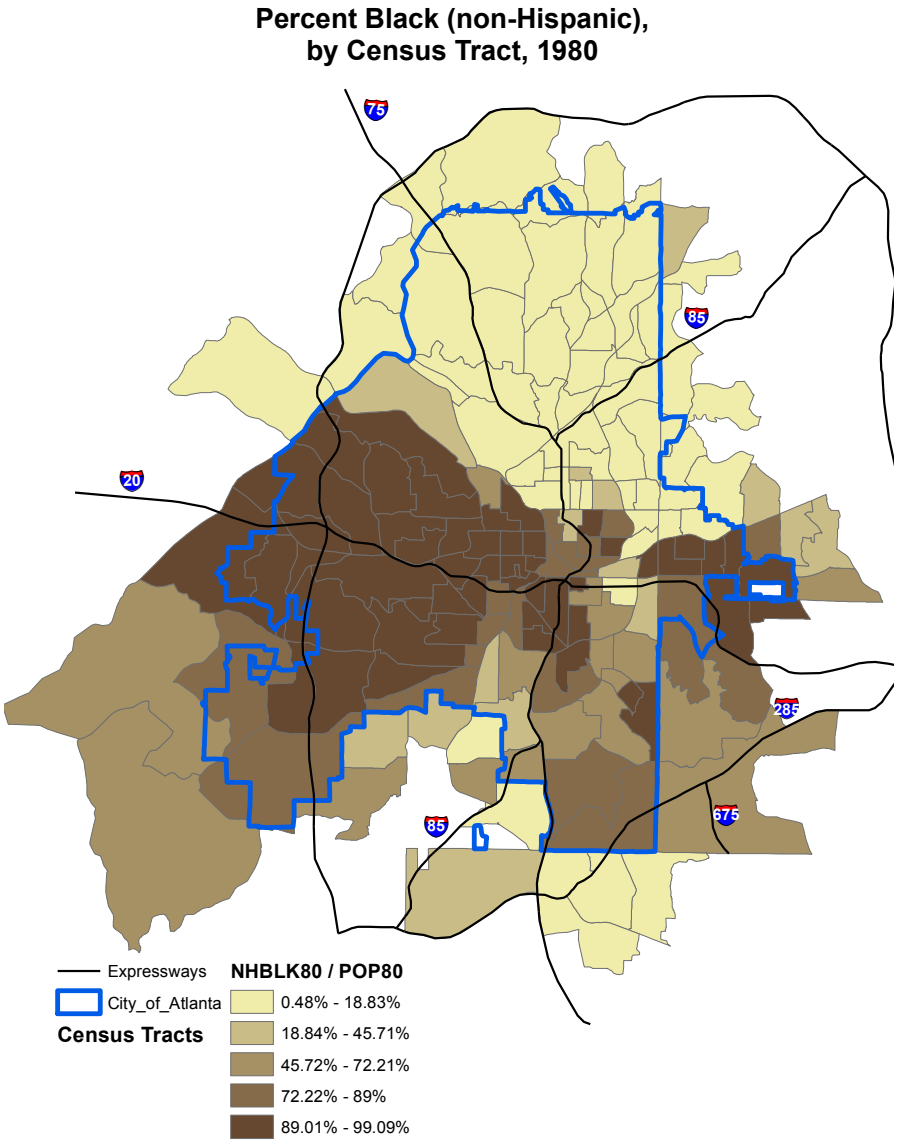

Figure 5 Percent Black by Census Tract, 1980[12]

[12] Source: Data from US Census as compiled by Logan, John R., Zengwang Xu, and Brian Stults. 2012. "Interpolating US Decennial Census Tract Data from as Early as 1970 to 2010: A Longitudinal Tract Database." Professional Geographer, forthcoming. Computations completed using ESRI ArcGIS Desktop 10.

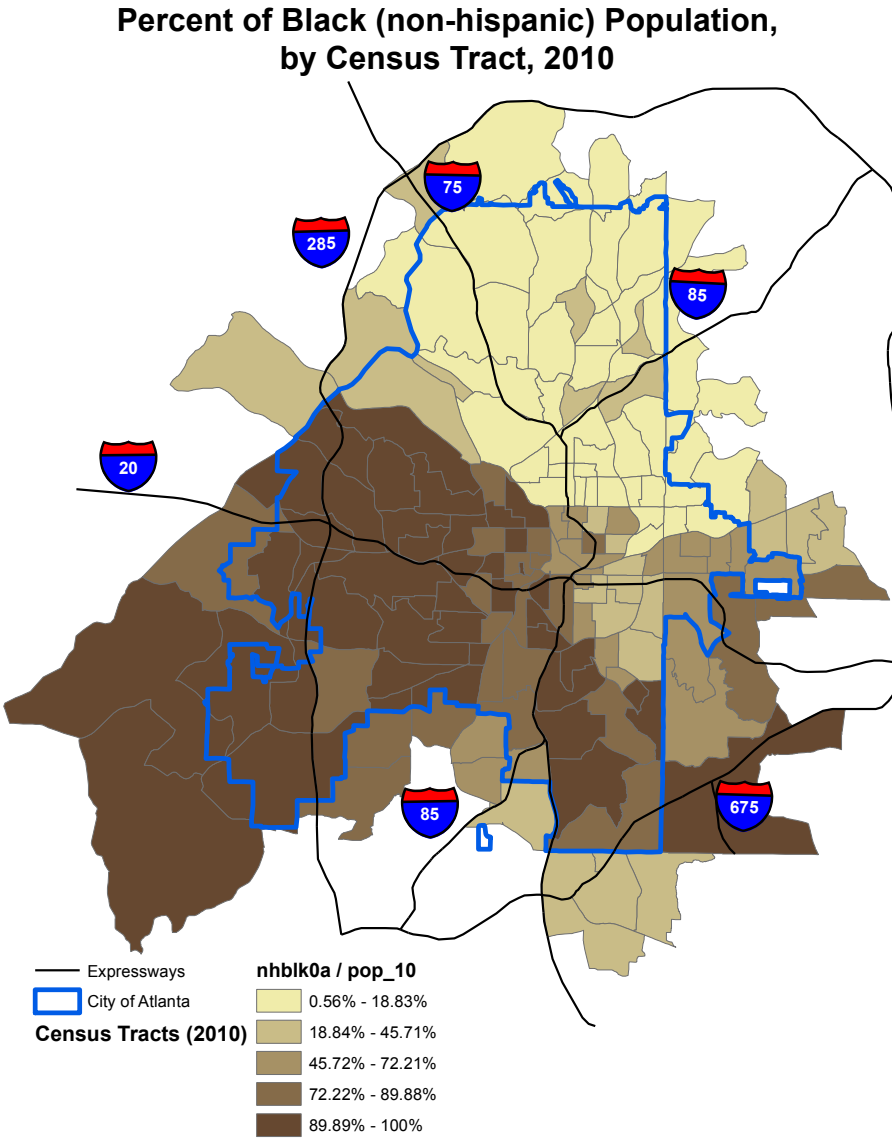

Figure 6 Percent Black by Census Tract, 2010[13]

[13] Source: Data from US Census as compiled by Logan, John R., Zengwang Xu, and Brian Stults. 2012. "Interpolating US Decennial Census Tract Data from as Early as 1970 to 2010: A Longitudinal Tract Database." Professional Geographer, forthcoming. Computations completed using ESRI ArcGIS Desktop 10.

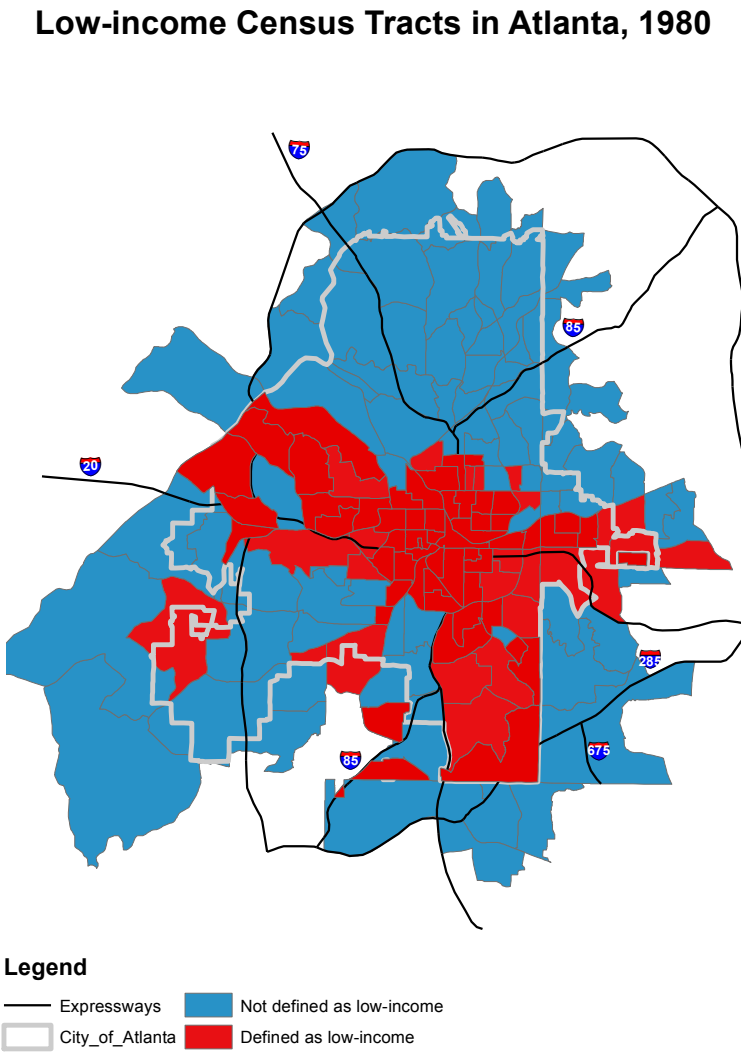

Figure 7 Low-income census tracts, 1980.
Low-income is defined as a census tract with a poverty rate greater than or equal to 20 percent, or median family income less than 80% of the metropolitan area. For 2010 data, the median family income per census tract was $43,671. For 1980 data, the median family income per census tract was $12, 483.91. If a census tract had less than 80% of 2010 median family income ($34,936.8) or less than 80% of 1980 median family income ($9,987.12), it was designated as low-income.

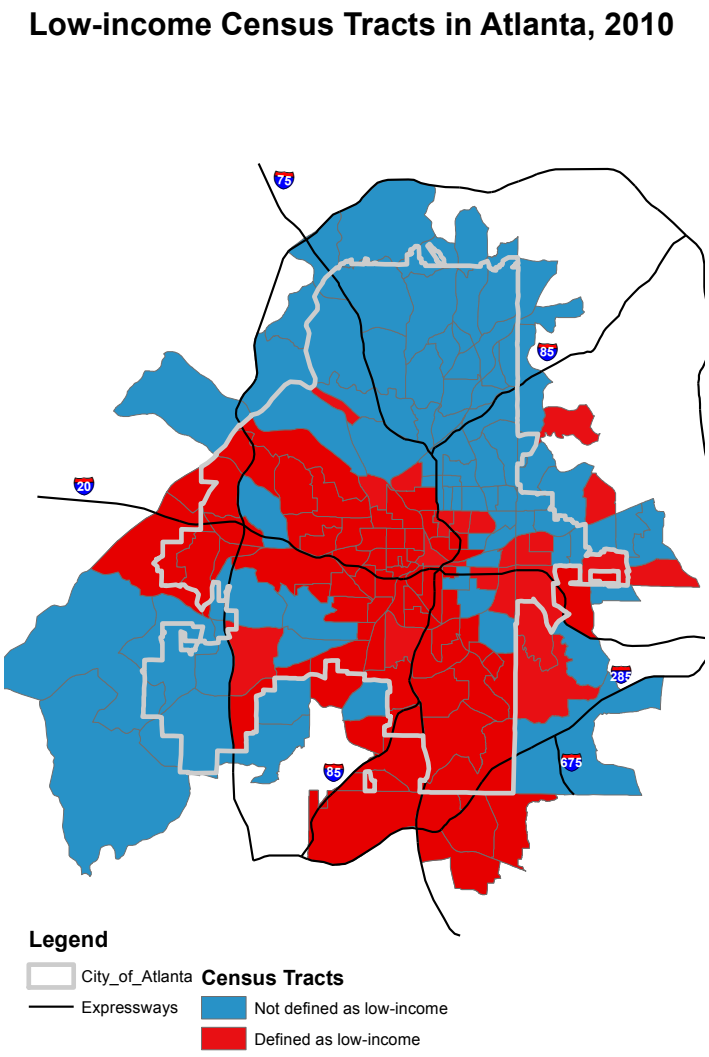

Figure 8 Low-income census tracts, 2010. [14]
Low-income is defined as a census tract with a poverty rate greater than or equal to 20 percent, or median family income less than 80% of the metropolitan area. For 2010 data, the median family income per census tract was $43,671. For 1980 data, the median family income per census tract was $12, 483.91. If a census tract had less than 80% of 2010 median family income ($34,936.8) or less than 80% of 1980 median family income ($9,987.12), it was designated as low-income.

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[14] Source: Data from US Census as compiled by Logan, John R., Zengwang Xu, and Brian Stults. 2012. "Interpolating US Decennial Census Tract Data from as Early as 1970 to 2010: A Longitudinal Tract Database." Professional Geographer, forthcoming. Computations completed using ESRI ArcGIS Desktop 10.

These maps illustrate the connection between Atlanta's racial segregation and class and income divisions. Importantly, they provide a clear context in which the spatial and geographic distribution of race and class can be understood. In this context, Atlanta is geographically divided along an east-west line. To the south of that line are majority black and low-income residents. To the north are majority white and middle to upper class residents. Areas south of the city also lost population throughout the thirty year span, while areas north of the city and to the east of downtown experienced an increase in population density. The areas just east of downtown have proven to be the least static. These areas have seen an influx in population overall and a decrease in both black residents and low-income residents. With this context firmly established, we can more fully describe the development of Atlanta's food deserts in relation to this landscape.

Data and Methods

This chapter addresses one primary overarching question: what demographic and spatial patterns have shaped supermarket access in Atlanta's low-income neighborhoods from 1980 to 2010? The methods used to describe this development include historical geo-spatial analysis, descriptive statistics comparing demographic and economic characteristics of non-food desert and food desert neighborhoods from 1980 and 2010, and inferential statistics to understand which factors are most significant n creating food deserts. These methods, and the data that they analyze, are explained below.

Data

Supermarket location data for 2010 was obtained from the Mergent Million Dollar Database on business and industries using the standard industry code (SIC) for supermarkets. Supermarket addresses were obtained from the City of Atlanta Directory for the year 1981 and filtered using the list of Progressive Grocer's 1981 annual supermarket analysis on top supermarket chain annual sales. These addresses were geocoded using ArcGIS Desktop 10 and spatially joined to demographic data. I obtained economic, demographic, and census tract boundary data from a longitudinal database of census data compiled by Logan, Xu, and Shultz that corresponds to 2010 tract boundaries (2012).

The geographic scale I use to define a neighborhood is a United States census tract within and adjacent to the political boundaries of the City of Atlanta. A census tract is a "small, relatively permanent subdivision of a county that generally contains between 1,000 and 8,000 people, with an optimum size of 4,000 people" (Economic Research Service 2012). A census tract is defined as low-income if it has a poverty rate of 20 percent or higher, or a median family income at or below 80 percent of the area's median family income. A low-income census tract is defined as a food desert when at least one third of the tract's population resides more than one mile (Euclidian distance) from a supermarket or large grocery store (Economic Research Service 2012). I use these definitions to compare the historical data with the current data on food deserts used by the Economic Research Service in the production of the food desert map.

Methods

Three simultaneous quantitative and geo-spatial methods are used. The first is geo-spatial analysis using ArcGIS software. Specifically, I employ descriptive spatial statistical methods on supermarket location data using spatial mean, spatial deviation ellipse, and cluster analysis. Descriptive geo-spatial statistics, including spatial mean, standard deviation ellipse, and spatial clustering analysis (Getis-Ord Gi*), show the locations of supermarkets in the City of Atlanta in the years 1981 and 2010[15]. Cluster analysis measures statistically significant clusters of high and low counts of supermarkets by census tracts using Z-scores to evaluate the presence of clusters and p-values to assess statistical significance. The spatial mean is a point feature that averages the x and y-coordinates of each supermarket location to illustrate the spatial center of all supermarket locations. The standard deviation ellipse calculates the standard deviation of x and y-coordinates of supermarket locations from the mean center to define the axes of the ellipse. The shape of the ellipse illustrates the overall spatial distribution of supermarkets and suggests if the distribution takes on a particular directional orientation. Finally, I use the USDA definition of food deserts to create two thematic maps of food deserts for 1981 and 2010 and use these maps to draw general conclusions about the spatial patterning of supermarket locations over the thirty-year period.

Descriptive and inferential statistics are used to understand the differences between food deserts and non-food deserts over time. I employ summary statistical

[15] Throughout this paper, when referring to demographic data I use 1980 because the 1980 US Census is the source of data. When referring to supermarket data in 1981, the year 1981 is used because supermarket locations were obtained from the City of Atlanta Directory for that year.

methods – the mean, standard deviation, standard errors, and histograms – to understand the distribution of the data. The variables are also analyzed using a Person product-moment correlation coefficient table that measures the linear correlation between two variables. Inferential statistics, specifically generalized linear regression, is used to determine what demographic and economic variables influence the odds that a low-income census tract will be designated as a food desert. The statistically significant independent variables and their odds ratio are analyzed to determine which variables have the greatest influence over whether a low-income census tract is a food desert. Importantly, these models take only low-income census tracts for both 1980 and 2010 and determine which variables are most responsible for turning low-income census tracts into food deserts. The models included in this analysis are based upon the previous studies on the demographic and economic factors influential in the development of food deserts, namely Dutko, Ploeg, and Farrigan's (2012) work using similar variables on a national dataset.

Logistic regression models test the influence of independent variables on the odds that a low-income census tract will be designated as a food desert. One set of models differentiates between 1980 and 2010 low-income census tracts. These regression models include the following independent variables:

- Percent black
- Percent of population age 16 or older that is unemployed
- Population density (measured per square acre)
- The interaction between percent black and percent unemployed

The second set of models include both 1980 and 2010 census tracts and similarly probe for the significance of the variables in influencing the odds that a low-income census tract will be designated as a food desert. This set includes four models. The first

set includes four models. The first model includes percent black, percent unemployed, population density, and percent vacant. The second model retains the same variables in the first model and adds the interaction of percent black and percent unemployed. The third model retains the same variables used in the first model and adds the interaction between percent black and population density. Finally, the fourth model retains the variables used in the first model and adds the interaction between percent unemployed and population density.

In summary, the methods simultaneously used include the following:

- Geo-spatial analysis: spatial mean, spatial deviation ellipse, cluster analysis (Getis-Ord Gi*), and thematic mapping
- Descriptive statistics: mean, standard deviation, standard error, and histograms
- Inferential statistics: logistic regression

The results of the analysis, followed by a discussion of their implications and significance, are below.

Findings

Spatial Analysis

Using spatial analytical methods in ArcGIS, the spatial mean of supermarket locations in 2010 is slightly north than the spatial mean of 1981 locations, indicating that the spatial average (or central location) of supermarkets shifted northward and away from majority-black neighborhoods during this time period (Figure 9). The standard deviation ellipse, however, illustrates a pronounced contraction of locations towards the center of the city and away from the outer tracts of the city's boundaries from 1980 to 2010 (Figure

9). Together, the spatial mean and deviation ellipse demonstrate that supermarket locations shifted more north and towards the central neighborhoods of the city.

A clustering analysis of supermarket locations demonstrates that high counts of supermarkets already existed in the northern areas of the city by 1980 (Figure 10). However, by 2010, the gap widened as the clustering increased in the north (red cluster) and brought with it a statistically significant decrease in supermarkets in the central-city area (blue cluster) (Figure 11). Overall, the clustering analysis demonstrates that the northward move of supermarkets away from black neighborhoods is statistically significant.

Thematic maps showing Atlanta's food deserts for 1981 and 2010 were created using the USDA's definition and criteria. Food desert tracts from 1981 and 2010 have increased in the south and southwest areas of Atlanta where the majority of the population is non-white and low-income (Figure 12 and 13). In 1980, food desert tracts were located on the northwest, southwest, and southeast tracts on the outer edge of the city. Supermarkets were located along the I-85 and I-20 highway corridors and were also distributed near downtown where the highways intersect. In contrast, in 2010, food deserts tracts spread to neighborhoods south of downtown and intensified in the west and southwest neighborhoods of the city. Additionally, supermarkets that were once located south of downtown along the north south I-85 corridor were gone by 2010 while the density of supermarket locations to the north remained stable. In 1981, there were 33 supermarkets and in 2010 there were 38 supermarkets within the City of Atlanta.

Finally, the loss of supermarkets in south Atlanta is more clearly demonstrated in Figure 14. From this illustration, one important trend is worth noting. Many of the 2010

supermarket locations are not in the same location as 1981 locations. This signals that new supermarkets, rather than the persistence of old locations, are partly responsible for the shift to the north of Atlanta. In other words, between 1981 and 2010 there is little continuity between stores.

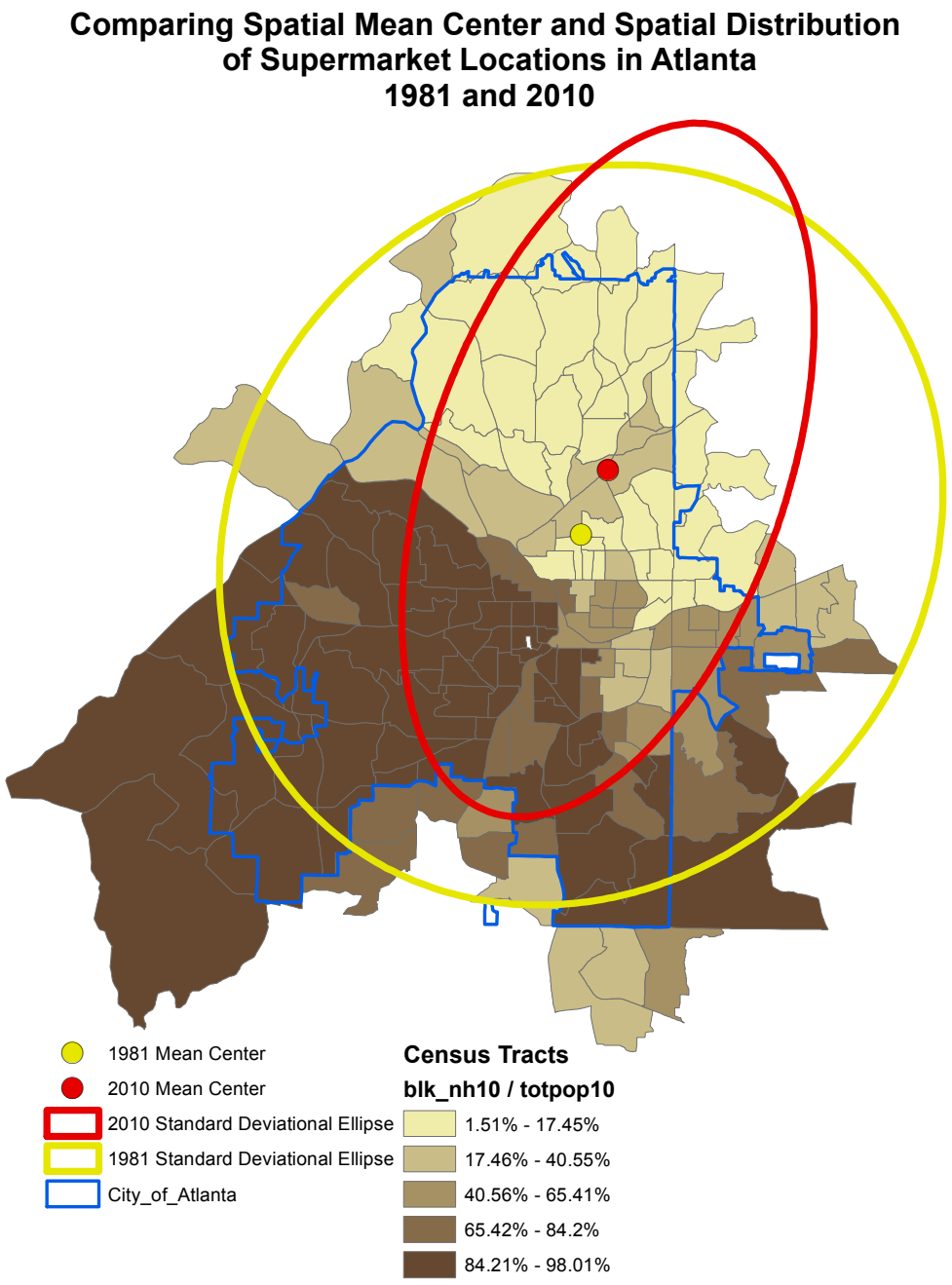

Figure 9 Spatial Mean and Spatial Distribution of Supermarket Locations

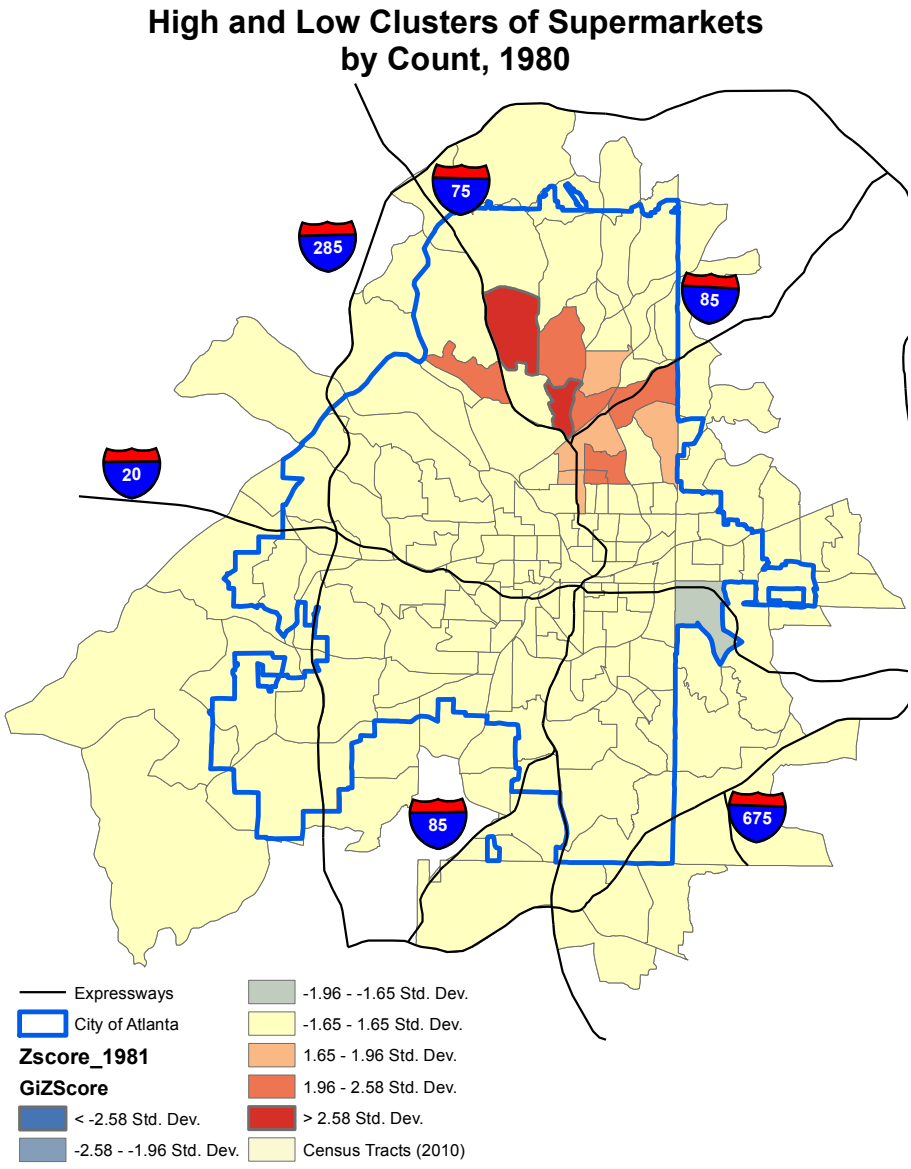

Figure 10 Cluster analysis of supermarkets, 1980

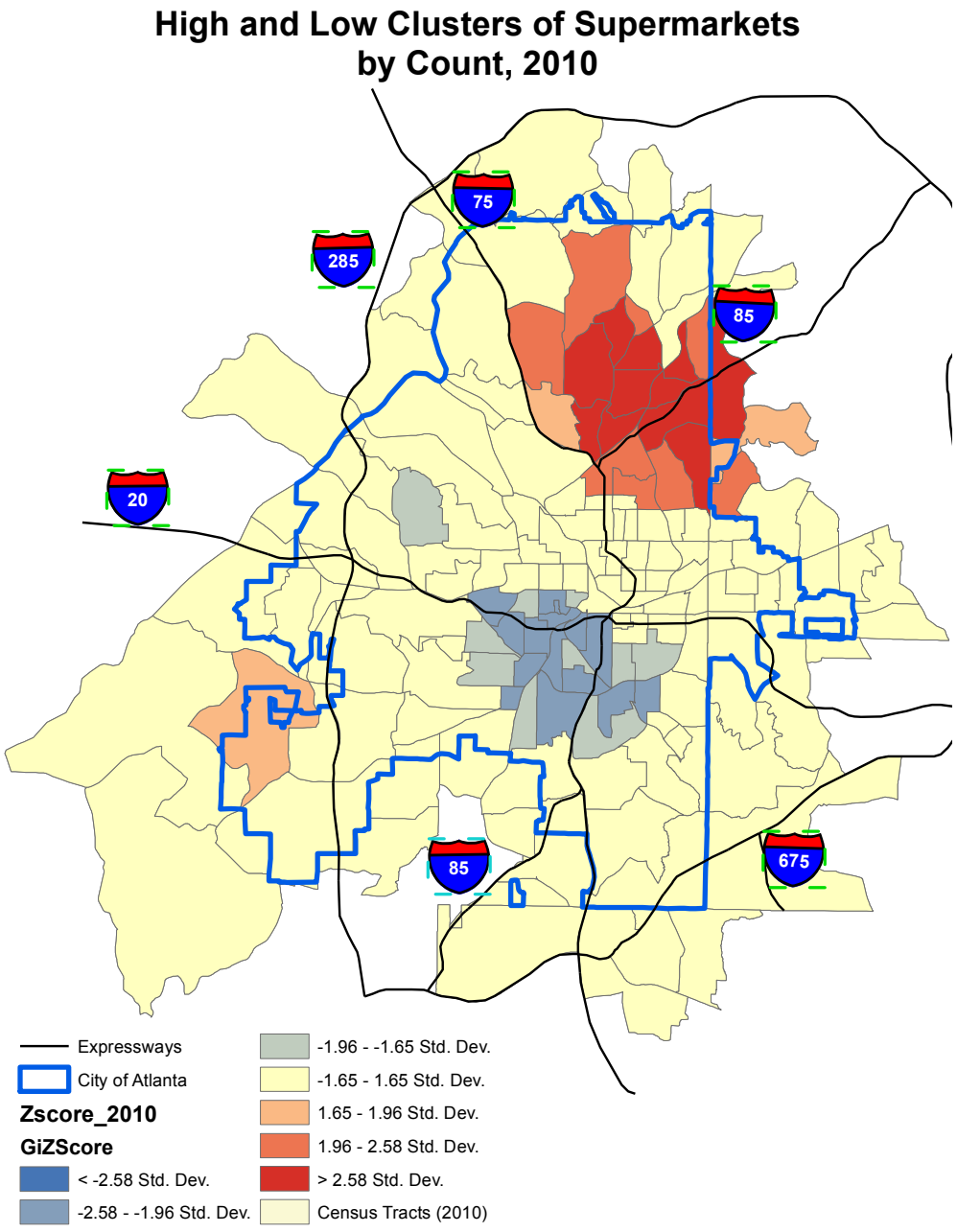

Figure 11 Cluster analysis of supermarkets, 2010

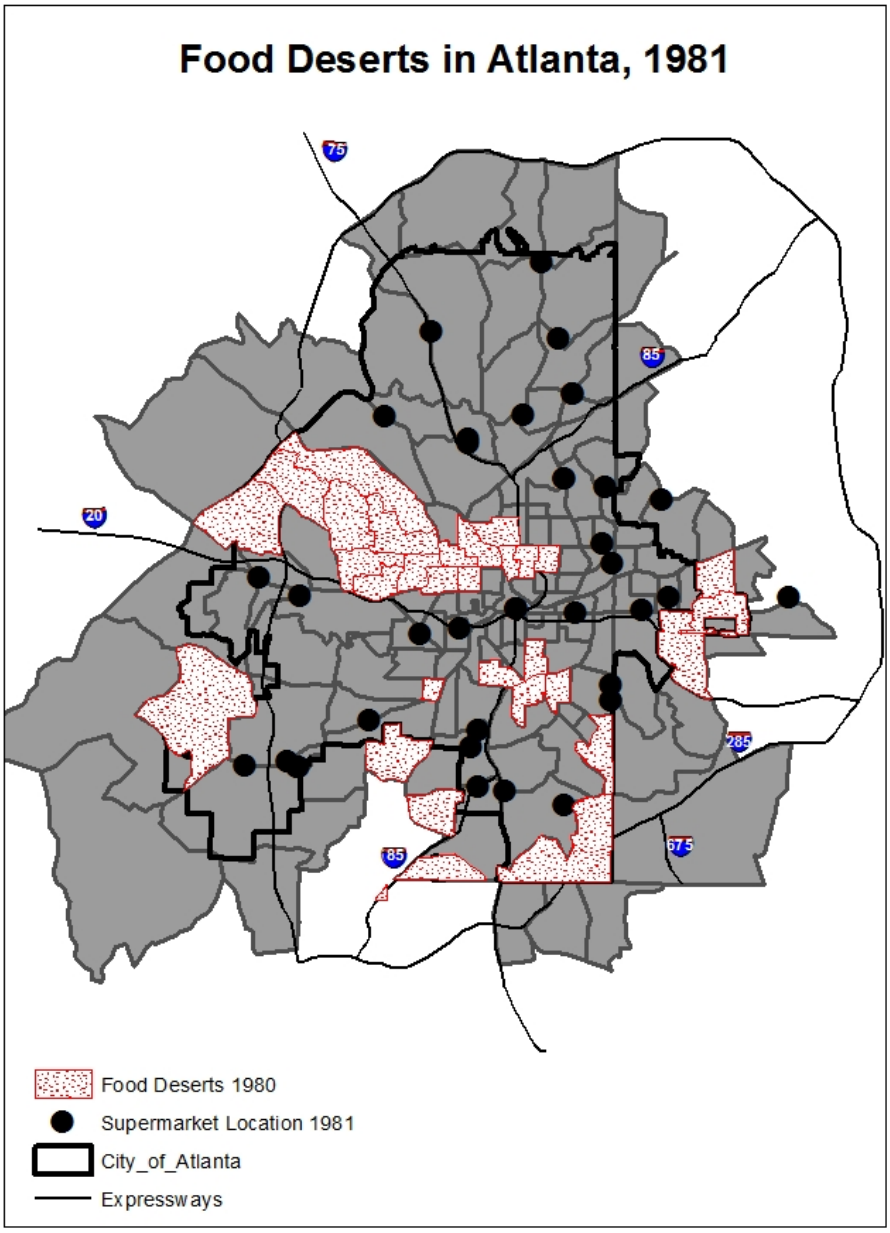

Figure 12 Food deserts in Atlanta, 1981

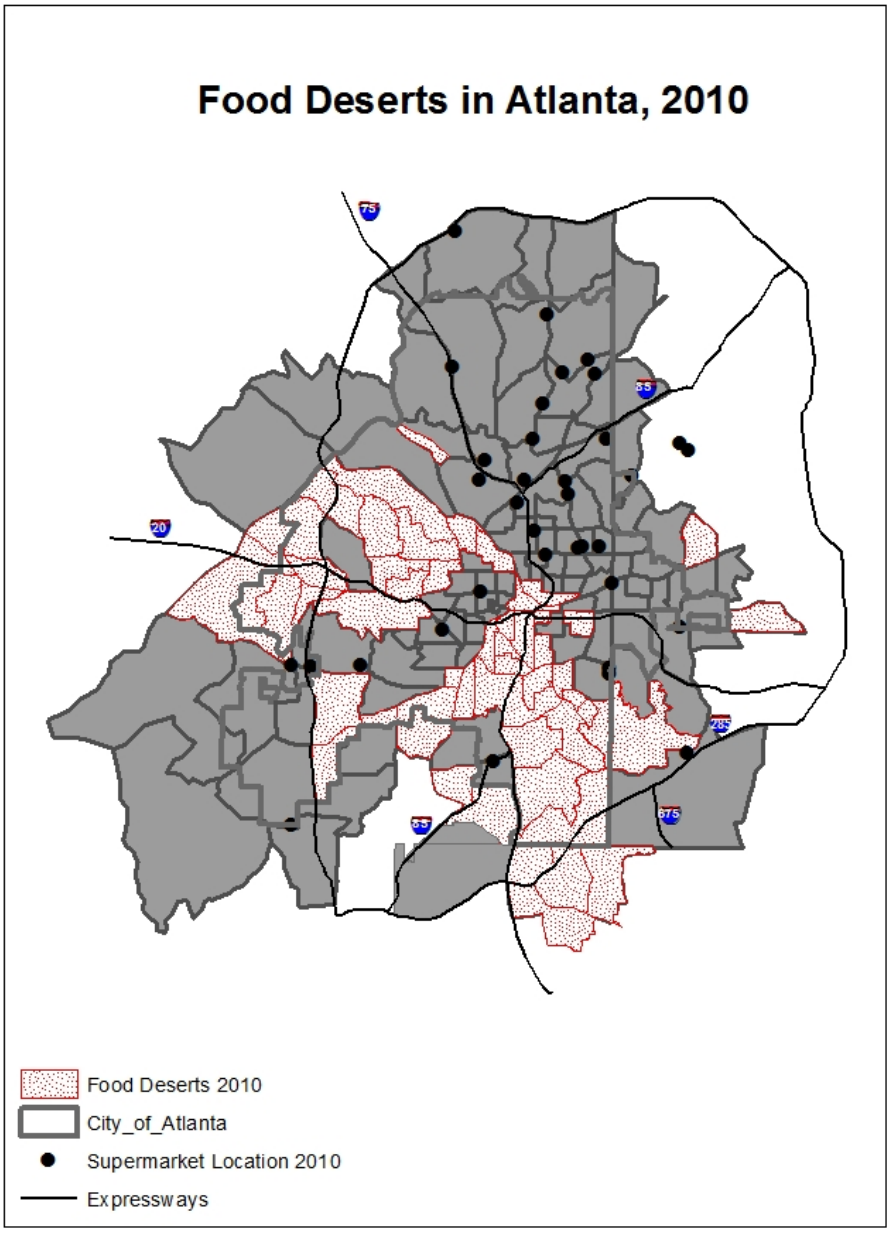

Figure 13 Food deserts in Atlanta, 2010

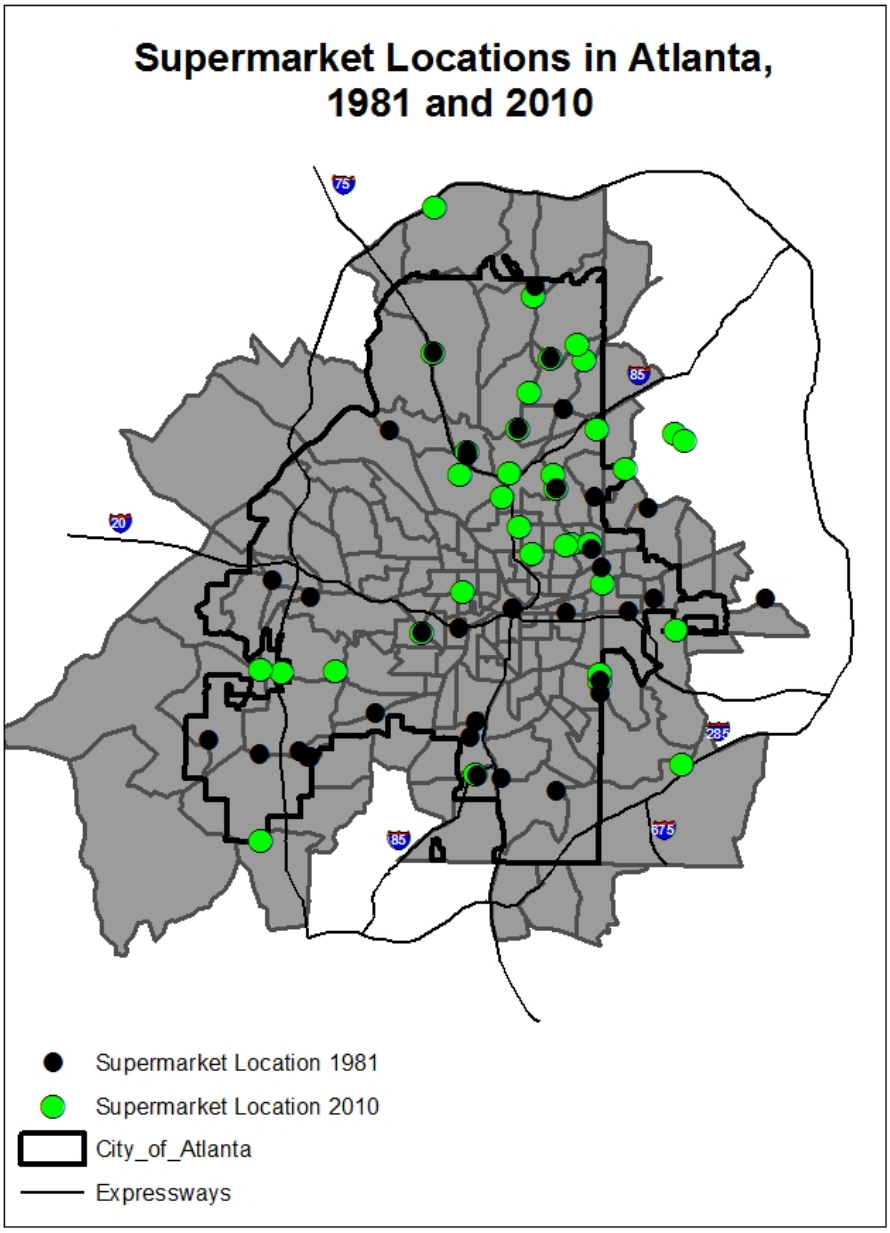

Figure 14 Supermarket locations in Atlanta, 1981 and 2010

Descriptive Statistics

The geo-spatial analysis explores the spatial dimensions of food deserts in Atlanta. Descriptive statistics, however, give us an understanding of the demographic and economic characteristics of these census tracts. To establish whether or not the differences observed between the means of variables for groups of food desert tracts and non-food desert tracts were statistically significant, the Welch two-sample t-test was performed. The results indicate that percent minority, percent unemployed, and population density are statistically significant when comparing food desert tracts and non-food desert tracts (Table 1).

Table 1 Welch Two Sample t-test

Welch Two Sample t-test of independent variables.						
	t-value	**df**	**P-value**	**Confidence Interval (95 percent)**	**Mean in group Not a Food Desert**	**Mean in group Food Desert**
Income	-1.5494	143.548	0.123	-5865.05 — 710.70	24350.48	26927.65
Percent Poverty	0.5283	154.712	0.598	-3.25 — 5.62	38.76	37.57
Percent Minority	-2.0799	155.357	**0.03917**	-14.01 — -.361	80.28	87.47
Percent Unemployed	-3.418	101.73	**0.0009**	-6.35 — -1.68	12.24	16.26
Percent Vacant	-1.8913	137.69	0.0606	-6.32 — 0.14	15.63	18.72
Population Density	5.4474	147.42	**2.092E-07**	2.42 — 5.18	9.28	5.47
Median Home Value	-1.94	153.966	0.05411	-41776.93 — 370.43	103630.3	124333.6

Table 2 Number and percentage of food desert tracts in dataset

Number and percentage of food desert tracts by low-income status for 1980 and 2010				
	1980	**2010**	**Combined (1980 and 2010)**	**Percent Change**
Food desert census tracts	30	54	84	+80%
Low-income census tracts	79	85	164	+7.59%
Total number of census tracts	166	166	332	0%
Food desert tracts as percentage of low-income tracts	37.97%	53.52%	43.29%	
Food desert tracts as percentage of total tracks	18.07%	32.53%	21.38%	
Note: Low-income census tracts are those with a poverty rate greater than 20 percent; median household income less than 80 percent of median household income of all census tracts in the city. Source: Authors' calculations using Decennial Census data from 1980 and 2010 and American Community Survey 2005 – 2009 data as compiled by Logan, Xu, and Stults (2012).				

There were a total of 79 low-income census tracts in 1980, 30 (37.97 percent) of which were designated as having limited food access. In 2010, there were 85 low-income census tracts, 54 (53.52 percent) were designated as having limited food access. An overview of census tract counts by year and description is provided in Table 2. A summary table of the means and standard deviation for all variables is displayed in Table 5.

There are several points to note regarding the distribution of the data. The median household income for all low-income census tracts is skewed to the right, indicating that the majority of tracts in the data set range from $10,000 to $40,000 in median household income (Figure 15). There are a few tracts that have median household incomes between $50,000 and $70,000, but these are outliers. Similarly, the histogram that illustrates the distribution of percent of the population in poverty is skewed right, indicating that there are a large number of tracts that have between 20 and 50 percent of the population in poverty (Figure 16). There are a few occurrences of a tract containing a poverty rate of

higher than 90 percent, but these are outliers. The same can also be said of the distribution of percent unemployed (Figure 17). Most census tracts in the data set contain between 5 and 20 percent of unemployed, with some outliers. This distribution is expected overall because this level of analysis looks exclusively at low-income census tracts. Thus, census tracts that have low poverty, unemployment, or income are not represented in this dataset. This skewed distribution, however, also indicates that these variables are not normally distributed and will require a log transformation to perform the generalized linear regression analysis.

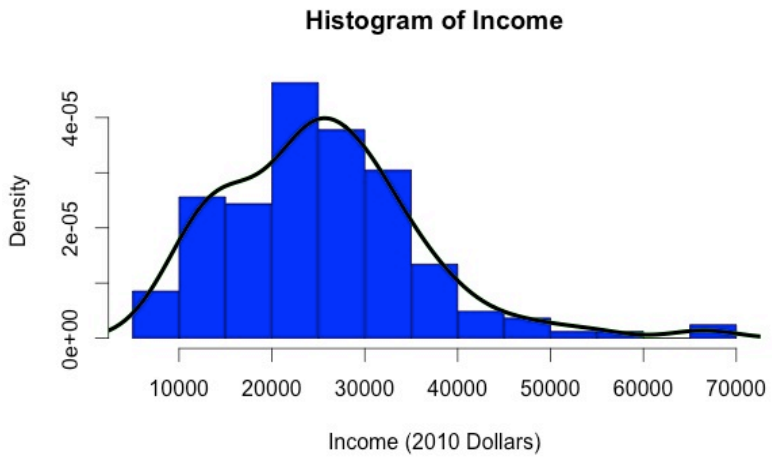

Figure 15 Histogram of median household income

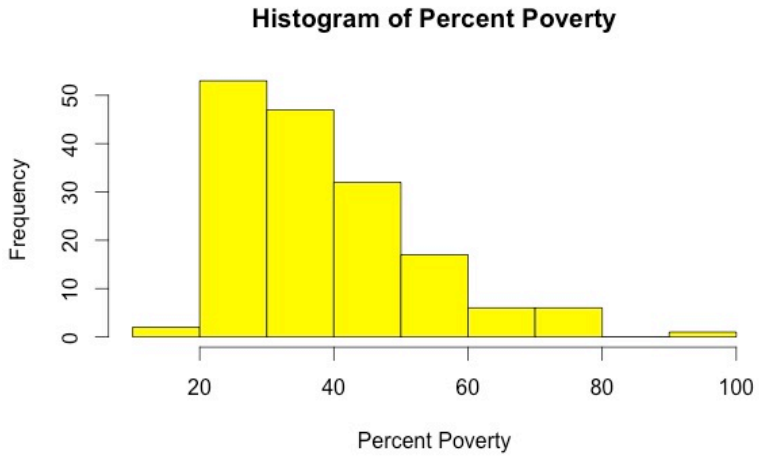

Figure 16 Histogram of percent poverty

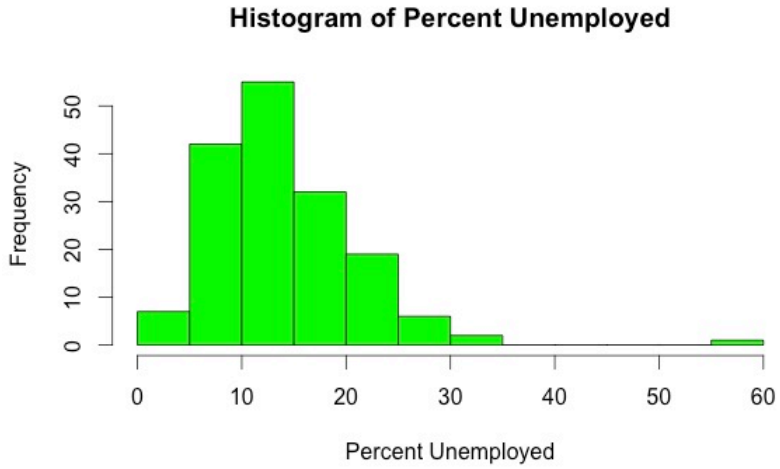

Figure 17 Histogram of percent unemployed

Demographic variables for food desert census tracts were compared with non-food desert tracts (Table 3). In 1980, food desert tracts were more densely populated than other census tracts. Thirty years later, however, this trend is reversed and food desert tracts decreased overall in population. The mean population of food desert tracts in 1980 was 5,512 people compared to 3,127 in 2010. These figures corroborate other studies on

Atlanta that have noted a decrease of population from the city followed by a slight population growth back into newly developed housing built near the downtown area throughout the 2000s.

Food desert tracts lost a share of white residents, from 14.5 percent of non-Hispanic whites in 1980 to 11.1 percent in 2010 (Table 3). In contrast, non-food desert tracts were 44.16 percent non-Hispanic white in 1980, and this figure grew slightly to 46.25 percent in 2010. In 1980, blacks comprised 83.5 percent of the population in food deserts, this dropped to 78.11 percent in 2010 for food deserts. By comparison, blacks made up only 53.5% of the population in non-food deserts in 1980, and 43.06 percent in 2010. Interestingly, African-Americans decreased in all tracts in both study years.

Table 3 Characteristics of food desert tracts compared to non-food desert tracts

Characteristics of census tracts by food desert designation: 1980 and 2010						
	1980			2010		
Variable	Food Desert	Non-Food Desert	Percent Change	Food Desert	Non-Food Desert	Percent change
Total population	5,512.88 (460.76)	3,350.73 (131.51)	-0.39	3,127.88 (245.13)	4,003.70 (182.93)	0.28
Population density	5.56	3.47	-0.37	3.45	4.08	0.18
Non-Hispanic White	14.51%	44.16%	2.04	11.14%	46.25%	3.15
Non-Hispanic Black/African-American	83.50%	53.55%	-0.35	78.11%	43.06%	-0.44
Hispanic	1.34%	1.37%	0.02	8.95%	5.64%	-0.36
Minority	85.48%	55.83%	-0.34	88.85%	53.74%	-0.39
Education less than a high school diploma	39.03%	37.20%	-0.04	40%	17.12%	-0.57
Bachelor's degree or higher	3.43%	13.64%	2.97	10.5%	37.74%	2.59
Median Household Income (in 2010 dollars)	25,434.37 (1,786.61)	20,868.75 (995.27)	-0.179	27,337.57 (1526.73)	62,487.68 (3303.63)	1.28
Percent of population below poverty level	36.12%	21.6%	-0.40	35.66%	14.18%	-0.60
Percent vacant housing units	7.90%	8.38%	0.06	21.9%	14.01%	-0.36
Population 16+ in civilian labor force and unemployed	12.15%	6.78%	-0.44	16.29%	7.89%	-0.51
Median Home Value (in 2010 dollars)	64,491.59 (4,280.94)	60,180.32 (3,991.01)	-0.06	140,760.80 (8,228.43)	181,292.55 (18,305.08)	.287
Note: Standard error shown in parenthesis. Dollars not adjusted. Source: Authors' calculations using Decennial Census data from 1980 and 2010 and American Community Survey 2005 – 2009 data as compiled by Logan, Xu, and Stults (2012).						

Those who resided in food desert tracts had less education and more poverty overall. In 1980, both food desert and non-food desert had a similar proportion of individuals with less than a high school diploma (39.03 percent and 37.2 percent,

respectively) (Table 3). However, in 2010 food desert tracts had disproportionately more people with less than a high-school diploma (40 percent), compared to 17 percent for all other tracts. For both 1980 and 2010, food desert tracts had approximately 2.5 to 3 times fewer individuals holding a four-year college, graduate, or professional degree.

Surprisingly, in 1980 non-food desert tracts had 17 percent less median household income than food desert tracts (Table 3). Home values too were surprisingly higher in food desert tracts for that same year. In 2010, however, this reversed and non-food desert tracts had 1.2 times more median household income than food desert tracts. Additionally, home values in non-food desert tracts far exceeded those in food deserts by 2010. Conversely, the poverty rate was higher in food desert tracts for both study years, as was the percent unemployed (12.15 percent in 1980 and 16.29 percent in 2010 for food desert tracts).

Changes over time between food deserts and non-food deserts were also analyzed. Over the thirty-year study period, Atlanta's food deserts experienced a net loss in population and gained a greater share of minority residents (Table 4). In contrast, non-food deserts experienced population growth comprised mostly of whites during the same time period. Specifically, non-food deserts lost African American residents and experienced a three percent decrease in their proportion of minority (non-white) residents overall.

From 1980 to 2010, food deserts experienced a slight (7.07 percentage points) increase in residents with a bachelor's degree or higher (Table 4). The same tracts also experienced a slight increase in median household income from $25,434 annually in 1980 to $27,337 in 2010. The poverty rate for food desert tracts during the study period

remained relatively stable, while their vacancy rate increased more than two-fold. The unemployment rate also increased slightly for food desert tracts in the study period, growing from 12 percent in 1980 to 16 percent in 2010.

Alternatively, non-food deserts saw even greater gains in income, population, and education. For non-food desert tracts, the period between 1980 and 2010 saw a decrease in population with less than a high school diploma and a notable increase in those with a bachelor's degree or higher from 13.64 percent in 1980 to 37.74 percent in 2010 (Table 4). Median household income increased significantly for non-food desert tracts from $20,868 in 1980 to $62,487 in 2010. The unemployment rate for non-food deserts tracts in 1980 was 6.78 percent and this grew slightly to 7.89 percent in 2010. However, the median household value for non-food deserts grew significantly from $60,180 in 1980 to $181,292 in 2010 (an increase of 287 percent).

Table 4 Changes over time for food desert tracts and non-food desert tracts

Changes over time in characteristics of census tracts by food desert designation from 1980 to 2010						
	Food desert			Non-food desert		
	1980	2010	Percent Change	1980	2010	Percent Change
Total population	5,512.88 (460.76)	3,127.88 (245.13)	-0.43	3,350.73 (131.51)	4,003.70 (182.93)	0.19
Population density	5.56	3.45	-0.37	3.47	4.08	0.17
Non-Hispanic White	14.51%	11.14%	-0.23	44.16%	46.25%	0.04
Non-Hispanic Black/African-American	83.50%	78.11%	-0.06	53.55%	43.06%	-0.19
Hispanic	1.34%	8.95%	5.67	1.37%	5.64%	3.11
Minority	85.48%	88.85%	0.03	55.83%	53.74%	-0.03
Education less than a high school diploma	39.03%	40%	0.02	37.20%	17.12%	-0.53
Bachelor's degree or higher	3.43%	10.5%	2.06	13.64%	37.74%	1.76
Median Household Income (adjusted in 2010 dollars)	25,434.37 (1,786.61)	27,337.57 (1526.73)	0.07	20,868.75 (995.27)	62,487.68 (3303.63)	1.99
Percent of population below poverty level	36.12%	35.66%	-0.01	21.6%	14.18%	-0.34
Percent vacant housing units	7.90%	21.9%	1.77	8.38%	14.01%	0.67
Population 16+ in civilian labor force and unemployed	12.15%	16.29%	0.30	6.78%	7.89%	0.16
Median Home Value (adjusted in 2010 dollars)	64,491.59 (4,280.94)	140,760.80 (8,228.43)	1.18	60,180.32 (3,991.01)	181,292.55 (18,305.08)	2.01
Note: Standard error shown in parenthesis. Source: Authors' calculations using Decennial Census data from 1980 and 2010 and American Community Survey 2005 – 2009 data as compiled by Logan, Xu, and Stults (2012).						

Table 5 Mean and standard deviation of independent variables

Mean and standard deviation (shown in parenthesis) of all variables sorted for both years by food desert designation						
	Median Household Income	Percent Vacant Units	Percent Minority	Percent Unemployed	Percent of Population in Poverty	Population Density
NFD	24,350.47 (10,848.59)	15.63785 (10.27483)	80.28834 (24.41451)	12.24298 (5.596449)	38.76098 (15.78924)	9.282445 (6.053745)
FD	26,927.65 (10,127.75)	18.72775 (10.20685)	87.47835 (19.63107)	16.26345 (8.328822)	37.57392 (12.82362)	5.477281 (2.766660)
Note: Calculations made using R statistical software. Source: Authors' calculations using Decennial Census data from 1980 and 2010 and American Community Survey 2005 – 2009 data as compiled by Logan, Xu, and Stults (2012).						

The Pearson correlation calculation (r) measures the linear relationship between two variables. Correlation results range between -1 and 1. There are two elements of the correlation coefficient that are important for interpretation, the sign and the number. A positive number indicates a positive relationship where high values on Y are associated with high values on X. A negative number indicates a negative relationship where a high value on Y is associated with high values on X. A coefficient of 1 represents a perfect linear relationship between variables and a 0 represents no predictable relationship between variables. The number indicates the strength of the association. Generally speaking, a value of .5 to 1.0 indicates a high correlation, values ranging from .3 to .5 a medium correlation, and .3 and below indicate a low correlation. In table 6 and 7, the correlation coefficients are presented for all low-income census tracts in 1980 and 2010 separately. The coefficients that are statistically significant ($p < 0.05$) are in bold.

Table 6 Pearson Correlation Table for Low-income Census Tracts, 1980 (statistically significant coefficients with p < .05 are in bold).

1980								
	Income	% Poverty	% Minority	% Vacant	% Unempl.	Pop. Density	Home Value	% Black
Income								
% Poverty	**-.89**							
% Minority	**-.34**	**.38**						
% Vacant	-.13	.07	-.10					
% Unempl.	**-.53**	**.62**	**.37**	-.01				
Pop. Density	**-.39**	**.34**	.18	-.06	**.31**			
Home Value	**.31**	**-.23**	**-.4**	.02	**-.24**	-.07		
% Black	**-.33**	**.37**	**1**	-.10	**.37**	.17	**-.41**	
N = 79								

Table 7 Pearson Correlation Table for Low-income Census Tracts, 2010 (statistically significant coefficients with p < .05 are in bold).

2010								
	Income	% Poverty	% Minority	% Vacant	% Unempl.	Pop. Density	Home Value	% Black
Income								
% Poverty	**-.59**							
% Minority	**-.74**	.2						
% Vacant	**-.35**	**.23**	**.28**					
% Unempl.	**-.46**	**.37**	**.48**	.05				
Pop. Density	-.02	.15	**-.29**	.14	-.16			
Home Value	**.64**	**-.3**	**-.67**	**-.42**	**-.39**	.23		
% Black	**-.65**	.16	**.91**	.23	**.5**	**-.24**	**-.56**	
N = 85								

For 1980 low-income tracts, there are several correlations that indicate the relationship between poverty and race (Table 6). In terms of poverty, percent poverty and income are strongly negatively correlated (r = -.89), indicating that a high value for percent poverty is associated with a low value in income. A positive relationship is found for percent unemployed and percent poverty (r = .62), and indicates that a high value for percent unemployed is associated with a high value of percent poverty. These two coefficients are hardly surprising. Yet, what is interesting is the correlation between poverty and race, which overall tend to have a positive correlation (as poverty increases so does percent minority and percent black). For example, percent black and percent poverty are positively correlated (r = .37), suggesting that high percentage of black residents is associated with high percentage of poverty. Percent black and percent

unemployed suggest a similar relationship (r = .37). When it comes to home values (as one indicator of poverty) and percent black, there is a negative relationship (r= -.41), indicating that a high percentage of black residents decrease home values. Interestingly, the relationship between percent poverty and home values (r = -.23) is less strong, suggesting that in terms of this data race is more strongly correlated to decreased home values that poverty.

For 2010 low-income tracts, the correlation table indicates that both percent black and percent minority have stronger associations than the low-income tracts from three decades earlier (Table 7). For example, percent minority and income are strongly negatively correlated (r = -.74) and home values and percent minority are also negatively correlated (r = -.67). These both suggest that high percentages of minority residents are associated with low incomes and low home values. Additionally, percent black and income grew have a stronger negative association (r = -.65) than they did in 1980, indicating that a high percent of black residents are strongly associated with lower median household income values. A high percentage of black residents in a tract is also positively associated with percent unemployed (r = .5). Similarly, percent black and home values are negatively associated (r = -.56), indicating that high values of percent black are associated with low home values for 2010 tracts.

These correlation tables tell us two important things. First, the concentrations of poverty and black and minority residents are positively correlated, and this association increases in strength between the two study years. In 1980, for example, high percentages of black residents were associated with high poverty rates, high unemployment, low home values and low income. In 2010, however, the strength of these correlations

increases. In particular, while percent black and percent unemployed had a medium positive correlation in 1980 (r = .37), by 2010, the correlation coefficient increases to .5. Similar increases in strength are also observed between percent black and income as well as percent black and home values. Second, whereas high values of population density were negatively associated with income in 1980 (r = -.39), this association decreased in strength in 2010 (r = -.02). Also, high values of population density were associated with high percent minority in 1980 (r = .18). Yet, in 2010, this association changed direction. In 2010, high values of population density were associated with low values of percent minority (r = -.29). This poses a key question: what important shifts occurred in Atlanta between 1980 and 2010 that shifted the population density in low-income census tracts? This question is addressed more directly in the next chapter. Before that, it is useful to investigate these variables using inferential statistics.

Logistic Regression

In the logistic regression models used in this analysis, food desert status is the binary dependent variable (1 = food desert, 0 = not a food desert). This model is used to determine what demographic and economic variables influence the odds that a low-income census tract will be designated as a food desert. The independent variables include median household income in dollars, percent of housing units vacant, percent of population of minority race/ethnicity, percent of population age 16 or older that is unemployed, percent of the population with income below the federal poverty line, population density (measured per square acre), median home value in dollars, and interactions between variables. The results of the logistic regression for 1980 census

tracts only and for 2010 census tracts only are presented in Table 8. The results of the logistic regression for both years combined are presented in Table 9.

Table 8 Logistic Regression Results for 1980 only tracts and 2010 only tracts

	1980							
	Model 1				**Model 2**			
	B	**se**	**Sig.**	**Odds Ratio**	**B**	**se**	**Sig.**	**Odds Ratio**
Constant	-.06	1.14	.55	.5	1.15	2.0	.57	3.17
% Black	-.003	.01	.76	.99	-.02	.02	.26	.97
% Unemployed	.06	.06	.32	1.06	-.16	.23	.49	.84
Population Density	-.17	.10	.09	.84	-.16	.09	.08	.84
% Black + % Unemployed					.003	.002	.29	1.00
Model χ^2	5.01, p > .05				6.27, p > .05			
Nagelkerke R^2	.101				.126			
N	79				79			
	2010							
	Model 3				**Model 4**			
	B	**se**	**Sig.**	**Odds Ratio**	**B**	**se**	**Sig.**	**Odds Ratio**
Constant	1.6	1.09	.14	5.0	2.8	2.5	.26	17.7
% Black	.001	.01	.90	1.0	-.01	.02	.66	.98
% Unemployed	.04	.03	.23	1.04	-.08	.22	.72	.92
Population Density	-.307*	.09	.001	.73	-.31*	.09	.001	.72
% Black + % Unemployed					.001	.002	.58	1.0
Model χ^2	21.35, p < .05				21.65, p < .05			
Nagelkerke R^2	.300				.304			
N	85				85			
* p < .05 (one-tailed tests)								

Table 9 Logistic Regression Results for 1980 and 2010 tracts combined

	Model 5				Model 6			
	B	**se**	**Sig.**	**OR**	**B**	**se**	**Sig.**	**OR**
Constant	.49	.77	.51	1.6	1.49	1.4	.3	4.4
% Black	1.002	.007	.74	.99	-.01	.01	.39	.98
% Unemployed	.08 *	.03	.01	1.08	-.02	.13	.84	.97
Population Density	-.29 *	.06	<.0001	.744	-.29*	.06	<.001	.74
% Vacant	.01	.01	.58	1.01	.01	.02	.6	1.0
% Black and % Unemployed					.001	.001	.42	1.0
% Black and Population Density								
% Unemployed and Population Density								
Model χ^2	44.84, p < .05				45.49, p < .05			
Nagelkerke R^2	.324				.328			
	Model 7				**Model 8**			
	B	**se**	**Sig.**	**OR**	**B**	**se**	**Sig.**	**OR**
Constant	.219	1.4	.87	1.24	.61	1.2	.6	1.8
% Black	.001	.01	.94	1.0	-.002	.008	.76	.99
% Unemployed	.08*	.03	.009	1.08	.07	.08	.38	1.0
Population Density	-.24	.2	.233	.77	-.31*	.15	.04	.73
% Vacant	.01	.02	.615	1.0	.01	.02	.57	1.0
% Black and % Unemployed								
% Black and Population Density	-.0006	.002	.82	.99				
% Unemployed and Population Density					.001	.009	.89	1.0
Model χ^2	44.89, p < .05				44.85, p < .05			
Nagelkerke R^2	.324				.324			
N = 164								
OR = Odds Ratio or the exponentiated coefficient. * p < .05 (one-tailed tests)								

Logistic regression is used to model the relationship between a binary dependent variable and a set of independent variables in terms of a transformed probability. When a binary dependent variable is used in logistic regression, the logit transformation of the outcome variable and the independent variables must be modeled linearly. To do this,

logistic regression transforms probabilities (which have a limited range from 0 to 1) into log odds (which have a range from 0 to infinity). This makes interpretation of the coefficients produced by the logistic regression somewhat complex, and therefore necessary to explain in detail.

Let **y** be the binary outcome variable indicating 0 for failure (in this case, a non-food desert tract), and a 1 for success (a food desert tract). Let **p** be the probability of success that y = 1, or p = prob(y = 1). Let $\mathbf{x_1, \ldots, x_k}$ be the independent variables. The logistic regression of **y** on **x1, …, xk** estimates parameter values for the coefficients $\boldsymbol{\beta_0, \beta_1, \ldots \beta_k}$ via the maximum likelihood method of this equation:

$$\textbf{Logit (p)} = \log(p/(1-p) = \beta_0 + \beta_1 x_1 + \ldots + \beta_k x_k$$

To find the probability from the logit transformation, take the exponential of the coefficient divided by 1 plus the exponent of the coefficient:

$$P = \exp(\beta_0 + \beta_1 x_1 + \ldots + \beta_k x_k)/(1 + \exp(\beta_0 + \beta_1 x_1 + \ldots + \beta_k x_k)$$

The exponential of the coefficient gives the odds ratio. An odds ratio that equals one indicates that both outcomes (0 and 1) have the same odds. When interpreting the odds ratio, it is most helpful to look at the extent it deviates from one. For example, an odds ratio of 1.33 means that holding all other variables constant, the odds of success increase 33 percent. Conversely, an odds ratio of .75 indicates that success is 25% less likely, holding all variables constant.

Table 8 indicates how population density became a significant variable over the study time period. For 1980 low-income census tracts, no terms are significant in model 1

and model 2. However, for 2010 low-income census tracts, population density is a significant term for both models. Model 3 indicates that the odds of a tract being designated as a food desert are lower for a denser tract. This implies that the probability of a tract being a food desert is lower for a denser census tract. The odds ratio of .73 in model 3 indicates that the odds of a tract being a food desert are lower by a factor of .74. In other words, for an additional unit increase in population density, the odds of a tract being a food desert is lower by 27 percent (.73*100-100). A similar relationship is found for population density with the introduction of the interaction term for percent black and percent unemployed in model 4. Overall, this indicates that while population density was not an important factor in 1980, it did become a significant factor in determining which low-income census tracts by 2010.

When considering both 1980 and 2010 low-income census tracts in the logistic regression model (Table 9), population density and the concentration of unemployment are significant variables predicting whether or not a tract will be a food desert. In model 5 and model 7 the odds that a tract will be a food desert are higher for a tract with more percent unemployed. This implies that the probability of a low-income census tract also being a food desert is higher for a tract with more unemployment. For additional percent increase in percent unemployed, the odds a tract will be a food desert is increased by a factor of .08. Put another way, for an additional percent increase in unemployment, the odds of a low-income census tract being a food desert increases by 8 percent. For models 5 – 8, population density is a significant variable that decrease the odds a tract will be a food desert. For example, in model 5, the probability that a low-income tract will be a food desert is lower for densely populated tracts. In this model, for each unit increase in

population density, the odds of a tract being a food desert decrease by 26 percent. Similarly, models 6 – 9 show a similar relationship with population density. Model 8, which includes the interaction term of percent unemployed and population density, shows that for each unit increase in population density, the odds of a low-income census tract being a food desert decrease by 27 percent.

Conclusion

This analysis of food deserts and non-food desert tracts clarifies how demographic and spatial patterns have shaped supermarket access in low-income neighborhoods across Atlanta from 1980 to 2010. In particular, these findings highlight the importance of racial segregation and the concentration of poverty, as well as population density, in the development of Atlanta's food vulnerable neighborhoods.

Geo-spatial analysis demonstrates that race and food access map over each other and suggest that socio-economic variables are correlated with food desert designation. In Atlanta, food deserts, which are by definition low-income tracts, are also predominantly non-white. That is, food deserts are not only a function of the concentration of poverty but they are also functions of racial segregation. The clustering analysis indicates that supermarkets are not located randomly across the cityscape but follow residents that are majority white and making income well above the poverty threshold. Over the past thirty years, supermarkets have increasingly located where white and non-poor residents live.

This analysis also suggests that Atlanta's food deserts have two shared characteristics that are directly related to the concentration of poverty. The first is education level. Throughout the thirty-year period, food deserts have housed people with far less education in comparison to other tracts. While census tracts throughout the

northern regions of Atlanta have boasted a growing educated class, food deserts have by and large remained a population with a high school diploma or less. The second characteristic is median household income. Food deserts, when compared to other low-income tracts in Atlanta overall, have less household income. Even when overall growth was reported throughout the city from 1980 to 2010, food desert tracts saw disproportionately less of that growth while other tracts saw a decidedly exponential growth in median income. While it is true that all tracts in this analysis were designated as low-income, it is important to note that FD tracts experienced a small share of rising incomes when compared to other tracts. This growth was matched by home values as well, with non-food deserts containing homes that were valued far more than their food desert counterparts. Home values are more than just another economic marker; because property taxes fund infrastructure maintenance and other public goods (roads, parks, services), this is also an indication of overall neighborhood resource allocation and quality of life that supermarkets are housed within. Food deserts also had a greater share of housing vacancy, percent unemployed, and percent minority when compared to non-food desert tracts. Taken together, these findings confirm that food deserts are a function of the concentration of poverty.

In addition to racial segregation and the concentration of poverty, food deserts are also influenced by demographic shifts, most notably population density. The regression models emphasize that an increase in population density significantly lowers the odds that a low-income census tract will also be a food desert. Population density is directly related to a supermarket's consumer base. The loss of population density logically bodes negatively for a store's profit margin and may contribute to the closure of stores.

Alternatively, the increase in population density represents an increase in potential consumers that could support supermarket retail.

Because population density is exclusively about residential population, this finding encourages us to look at policies that have shifted residential patterns as an important part of how food deserts developed across Atlanta. There are several possible factors that have influenced residential settlement across Atlanta – and therefore population density – including public housing policies and redevelopment initiatives. The HOPE VI federal program, facilitated by the Housing and Urban Development agency and the Atlanta Housing Authority, implemented a public housing strategy that dispersed population density in south Atlanta where the majority of public housing units were located. These strategies favored the destruction of public housing complexes and, in turn, distributed public housing vouchers so that residents could theoretically re-locate in neighborhoods of their choosing. The Atlanta Housing Authority saw this as a unique strategy to disperse the concentration of poverty that plagued much of south Atlanta. The consequence of HOPE VI for residential patterns in south Atlanta is taken up in more detail in the next chapter. Additionally, redevelopment initiatives that used public and private funding to build mixed-use development near the downtown neighborhoods throughout the 2000s are also related to population density. These redevelopment initiatives brought in middle and upper income residents to neighborhoods just east of downtown and shifted the population density significantly in these tracts. These redevelopment initiatives and their consequences for food deserts in Atlanta are taken up in greater detail in the next chapter.

In closing, an important implication of this research is that Atlanta neighborhoods do not suddenly become food deserts. Instead, food deserts are the result of historical processes of disinvestment and racial segregation that extends far beyond the year 1980 and includes far more the location of supermarkets. Therefore, I think it is more appropriate to begin to cast aside food deserts, and conceptualize those who are food deserted. Doing so centers the very people and communities that have experienced the ever changing built environment as a process guided by racist and market-based initiatives that exclude their need for food and other basic amenities and services. By putting the people back in, we can undertake a more holistic investigation of food access in Atlanta and the connections this process has to political and economic forces shaping the city. Finally, if we forego the concept of food deserts, we can understand and hold accountable the specific processes and decision makers that have produced Atlanta's uneven landscape.

The findings highlighted in this chapter confirm that Atlanta is no exception to the trends identified in current literature on uneven food availability in urban landscapes. This study provides empirical evidence that food access is limited for non-white communities and demonstrates that this gap has widened from 1980 to 2010. This chapter offers a few important implications for the subsequent qualitative research on food access and the communities that have been food deserted and disinvested. Building upon the historical analysis outlined in this paper, subsequent qualitative methods studies must account for the historical decision points and decision makers that planned Atlanta's built environment and created spatial clusters of high and low supermarket access that map onto race and class. In doing so, this approach can provide us with a qualitative

understanding of how these decisions are framed, managed, and negotiated by a set of political and economic actors. The findings and discussion of this methodological approach are outlined in the next chapter.

CHAPTER 5

CASE STUDIES

The previous chapter provided an analysis of the development of food deserts across Atlanta from 1980 to 2010 and highlighted important spatial relationships, demographic variables, and economic indicators. The analysis demonstrated that these relationships and variables directly relate to questions of food access and the development of neighborhood-level food vulnerability. While we have explored the changing characteristics of food deserts in Atlanta throughout the past thirty years, so far this analysis falls short of providing any description of the processes and decisions that go into the production of neighborhood-level food vulnerabilities. Up to this point, this analysis unearths more questions than it answers. For example, what factors are most important in locating supermarkets in Atlanta neighborhoods and under what political conditions? Who are the actors and the players that take part in the development and changing landscape of food deserts?

This chapter addresses the second research question, how have market actors, the influence of urban political regimes, and community groups shaped food access in historically black neighborhoods in Atlanta from 1980 to 2010? To answer this question, two case study sites were selected. The objective is to compare how independent variables (capital, governing regimes and coalitions, and community-based groups) have worked to produce two different outcomes in food desert status.

The analysis contained in this chapter supports three key findings related to market actors, state actors, and community groups. First, market actors – specifically, the

supermarket industry – largely influenced the location of Atlanta's grocery stores. Although grocery stores existed in both case study neighborhoods in 1980, grocery stores in Pittsburgh closed down as the result of intense market competition in the 1990s brought on by Publix entering Atlanta's grocery market. In contrast, the Old Fourth Ward experienced an influx of supermarkets due to the same forces of market competition and mixed-use development in neighborhoods near downtown Atlanta. Taken together, these factors produced a food desert and a community of food deserted residents in Pittsburgh, while placing supermarkets in and near the Old Fourth Ward. Second, state actors partnered with market actors to spur redevelopment plans that included mixed-use development strategies. These strategies had important implications for supermarket development because the mixed-use development project in the Old Fourth Ward included a supermarket. Third, community actors have limited influence over supermarket location. Redevelopment plans, while useful in codifying the concerns of some community residents, are limited in their ability to re-shape the supermarket landscape. By and large, private investors and developers are needed to realize the vision contained in these plans. While the investors and developers expressed interest in the Old Fourth Ward, the advocates for Pittsburgh's redevelopment were largely in the position of soliciting participation from investors and the private sector, to no avail. Even established organized groups such as the Southern Christian Leadership Council (SCLC) and the National Association for the Advancement of Colored People (NAACP) had little influence over influencing the location strategies of supermarkets.

This chapter is organized into five parts. In the first section, I provide the background of both case study neighborhoods by describing the supermarkets located in

and near the neighborhoods in 1980 and 2010. I also explore the major trends in Atlanta's supermarket industry and compare the experience of these neighborhoods to these larger trends and patterns. In the second section, I provide an overview of the data and methodology used in this chapter. In particular, I highlight the redevelopment plans used for both case study sites, Pittsburgh and the Old Fourth Ward. Additionally, I provide an outline of the coding scheme used in the analysis of the redevelopment plans and a brief overview of other sources, primarily news accounts, used in this investigation. In the third section, I review the total counts for each code by neighborhood, including co-occurrences of codes, as a preliminary indication of possible interaction between actors. In the fourth section, I provide an analysis of the data based on themes and major findings. I situate this analysis within the story of Atlanta's 'supermarket wars' that raged on from the early 1990s to 2000s, as this is the period where there is the most fluctuation in supermarket locations being built and closing. Importantly, my focus in this analysis is on the market, state, and community-based actors that have attempted, with varying degrees of success, to shape supermarket development in Atlanta. In the final section, I review the conclusions gleaned from the analysis and bring closure to the research question that guides this chapter.

Background and Context

Based on the data analysis of the quantitative phase, two Atlanta neighborhoods were chosen as case study sites: Pittsburgh and the Old Fourth Ward (see Figure 18). Both case study neighborhoods of Pittsburgh and the Old Fourth Ward share a common set of characteristics. The social conditions of Pittsburgh and the Old Fourth Ward throughout the 1980s were largely similar and both neighborhoods experienced a general

lack of economic development and infusion of capital. Both neighborhoods have a majority black residential population; each has mixed land use including residential, commercial, and retail use; both are adjacent to the downtown area (Pittsburgh is southwest of the city, Old Fourth Ward is to the east), located on Atlanta's Beltline redevelopment project, and are situated within one mile of a major highway; and both have active neighborhood associations, community-based groups, neighborhood planning units, and city council representation. In contrast, the major difference between these neighborhoods is their food desert designation. The Old Fourth Ward boasts access to at least three chain supermarkets, one municipal market, and one productive urban farm with an active community supported agriculture distribution network. Unlike the Old Fourth Ward, the Pittsburgh neighborhood has access to no major supermarket chains, no farmers market, and one newly erected community garden that at the time of this writing is unable to distribute food.

Pittsburgh and the Old Fourth Ward shared similar demographic profiles in 1980. Both neighborhoods had similar population density, percent black, and percent poverty (Table 10). Specifically, both neighborhoods had a black population over 90 percent and had over 45 percent of the population living in poverty. The two case study neighborhoods also had similar population density with Pittsburgh containing 8.09 persons per acre, and the Old Fourth ward had 9.8 persons per acre.

Table 10 Demographic and economic characteristics of the Old Fourth Ward and Pittsburgh in 1980 and 2010

	1980			2010		
Neighborhood	Population Density (Per Acre)	Percent Black	Percent Poverty	Population Density (Per Acre)	Percent Black	Percent Poverty
Old Fourth Ward	9.8	91%	49.2%	10.9	56.3%	33.8%
Pittsburgh	8.09	95.1%	47.8%	6.49	95.9%	50.4%

Note: The Old Fourth Ward includes Census tracts 29 and 17. The neighborhood of Pittsburgh includes Census tracts 57 and 63.
Source: Authors' calculations using Decennial Census data from 1980 and 2010 and American Community Survey 2005 – 2009 data as compiled by Logan, Xu, and Stults (2012).

In 1980, Pittsburgh and the Old Fourth Ward were economically and socially distressed areas. According to the assessment laid out in the plan, commercial conditions had deteriorated to the point where there was an abundance of "inadequate neighborhood shopping facilities" (Atlanta., (Ga) Bureau of Planning 1980: 79). The plan itself suggested that vacant publicly owned land should be cleared and used for profitable uses that would address this pressing need for neighborhood retail. Additionally, the neighborhoods around the central business district, including Pittsburgh and the Old Fourth Ward, held 26 percent of the city's public housing or approximately 5,600 units. According to the plan, this concentration of poverty eroded the capacity of the neighborhood to sustain vital economic activity.

Six years later, in 1986, conditions were overall similar, with some notable exceptions. The 1986 Comprehensive Development Plan for Atlanta applauded the progress downtown neighborhoods had made in revitalizing residential and commercial activity, in particular it signaled that neighborhoods surrounding the Old Fourth Ward were attracting residents with higher incomes. The plan cited neighborhoods such as Kirkwood and Inman Park, which are located just east of the Old Fourth Ward had

managed to create "a diverse mix of upper and lower income communities." As a result, the plan explained, "the momentum of reinvestment seems to be well entrenched in these neighborhoods" (Atlanta., (Ga) Bureau of Planning 1986: 40). The neighborhoods surrounding the Old Fourth Ward neighborhood had also recently experienced the redevelopment of the Ponce de Leon Plaza that "made it one of the most attractive small commercial shopping areas in the city" (Atlanta., (Ga) Bureau of Planning 1986: 40). The Old Fourth Ward, in contrast to Pittsburgh, was surrounded by redevelopment initiatives that mixed the income and economic characteristic of the neighborhood overall. Pittsburgh, on the other hand, was surrounded by neighborhoods that were experiencing the same level of neglect and disinvestment. By 1986 the Neighborhood Planning Units in northeast Atlanta (including NPU M which contains the Old Fourth Ward) were decidedly an "area of attractive, low density neighborhoods…with an average annual income of $31,720, the highest in the city" (Atlanta., (Ga) Bureau of Planning 1986: 38). In contrast, the neighborhoods surrounding Pittsburgh included "27,000 households with an average household income of $14,536, just below the city median" (Atlanta., (Ga) Bureau of Planning 1986: 42). By 1989, the city's comprehensive development plan attempted to address some of the consequences of these conditions focusing on neighborhood retail uses, such as grocery stores, laundry facilities, and restaurants as important elements for successful redevelopment initiatives. These ideas were just that, ideas. Changes in these neighborhood retail environments, as it turns out, did not stem from redevelopment plans, but from changes in Atlanta's grocery market in the early 1990s.

By 2010, however, the neighborhoods were drastically different on all three demographic measures and the Old Fourth Ward was decidedly less black, less poor, and denser. Specifically, the Old Fourth Ward had a population density of 10.9 persons per acre, a population of 56 percent black, and 33.8 percent in poverty (Table 10). In contrast, Pittsburgh lost population density by 2010 and contained only 6.4 persons per acre. The neighborhood also grew slightly in black residents (95.9 percent) and residents living in poverty (50.4 percent).

This demographic profile suggests that although the Old Fourth Ward and Pittsburgh began with similar demographic characteristics and food desert status in 1980, by 2010 their conditions had significantly changed. This analysis demonstrates important demographic and economic shifts. The Old Fourth Ward experienced growth in population density, a decrease in percent black, and a decrease in percent poverty and by 2010 was *not* designated as a food desert. Alternatively, over time, Pittsburgh experienced a loss of population, and increased concentration of black residents and residents living in poverty.

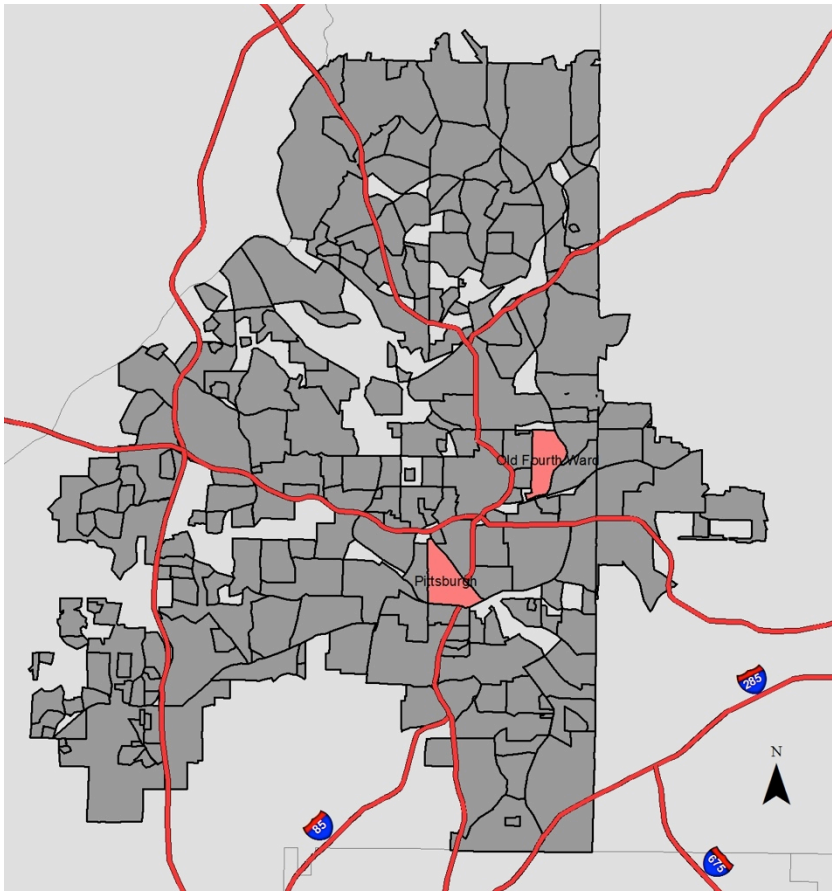

Figure 18 Pittsburgh and the Old Fourth Ward in relation to the City of Atlanta

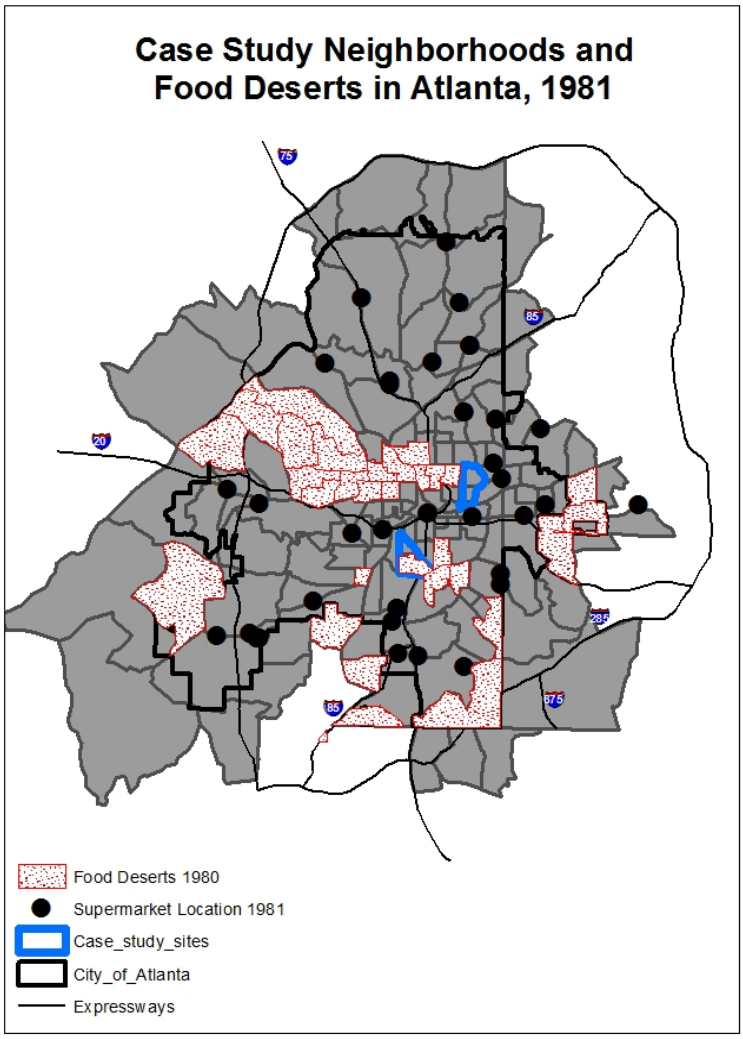

Figure 19 Case study neighborhoods and food deserts in Atlanta, 1981

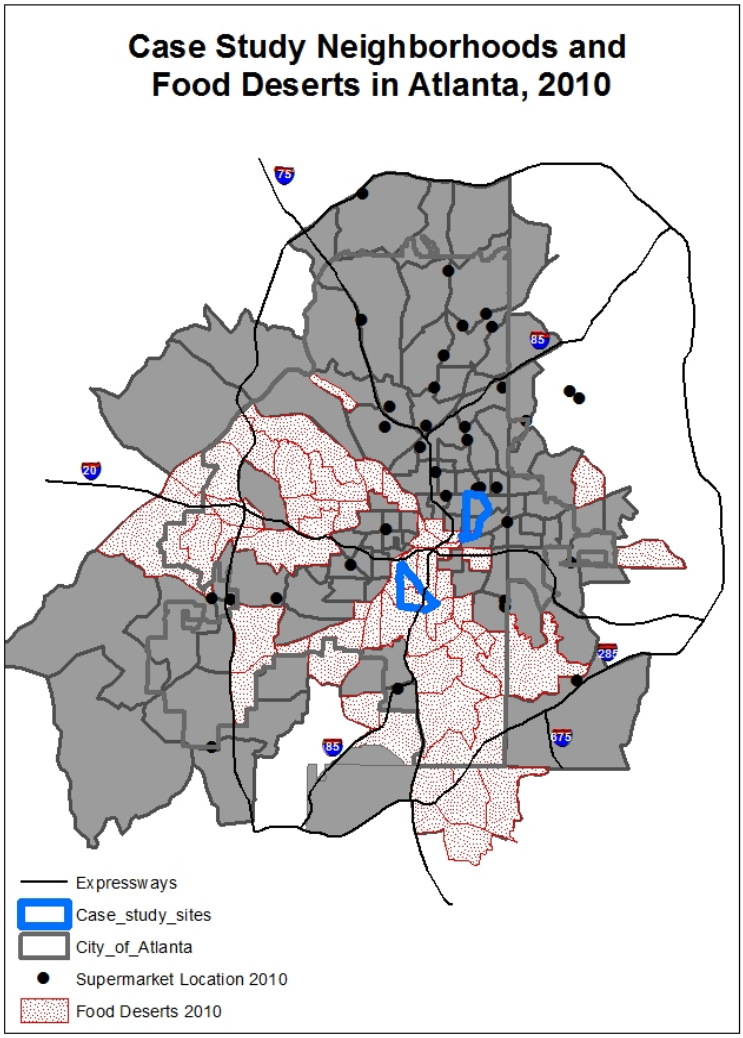

Figure 20 Case study neighborhoods and food deserts in Atlanta, 2010

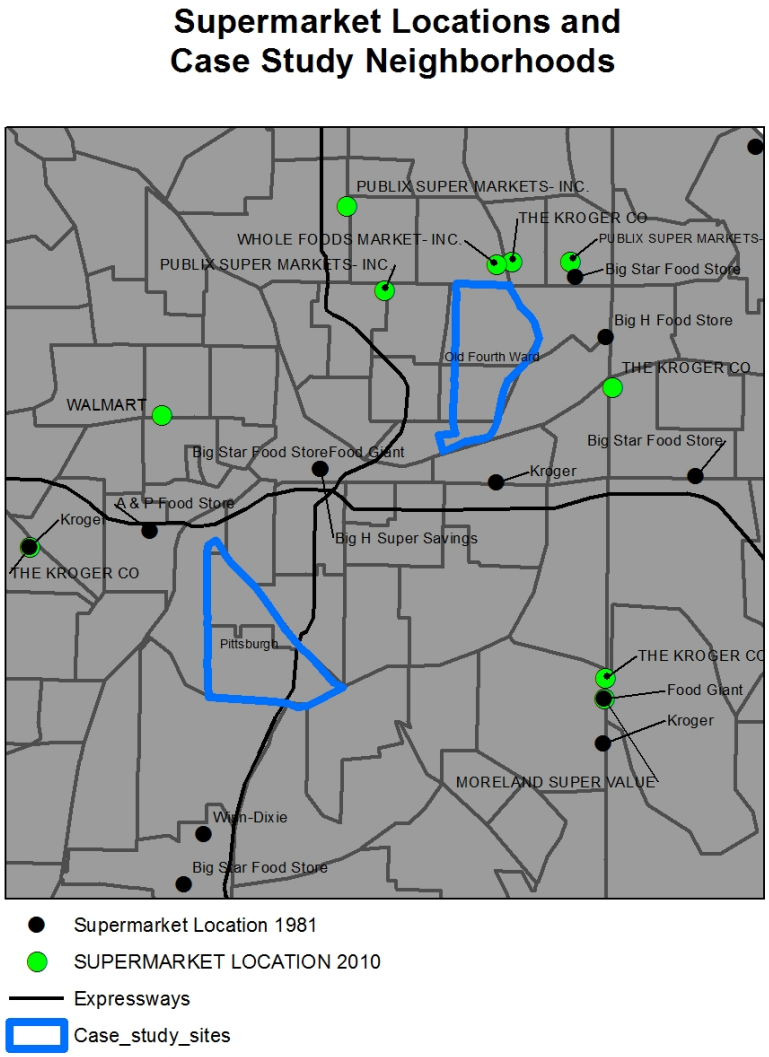

Figure 21 Supermarket locations and case study neighborhoods

Neighborhood Supermarket Landscape

Throughout the thirty-year study period from 1980 to 2010, Pittsburgh and the Old Fourth Ward began with similar supermarket densities but experienced different changes in their supermarket retail landscape. In 1980, both neighborhoods had supermarkets located within a one to three mile radius (see Table 11 and Figure 21).

According to Atlanta's 1981 Directory[16], Pittsburgh had access to an A&P store, a Winn-Dixie supermarket and a Big Star Food Store (Table 11, Figure 21). That same year, the Old Fourth Ward had a Big Star Food Store on Ponce de Leon Avenue. In 1981, the Old Fourth Ward and Pittsburgh did not entirely meet food desert status (Figure 19).

By 2010, however, the supermarket retail landscape had shifted drastically. Pittsburgh no longer had the three supermarkets it did in 1981; all stores closed down and the nearest supermarket was located more than three miles away. Alternatively, the Old Fourth Ward now boasted a Kroger on Ponce de Leon Avenue, and two locations for Publix Supermarkets (one on Piedmont Avenue and one on Ponce de Leon Avenue). Under these conditions, by 2010 the neighborhood of Pittsburgh met the criteria for food desert, while the Old Fourth Ward did not (Figure 20). The data explored in this chapter, and the findings distilled from the analysis, help us understand why this is so.

Table 11 Supermarket and grocery chain locations in Case Study Sites in 1981 and 2010

1981		**2010**	
Pittsburgh Not a food desert	**Old Fourth Ward** Not a food desert	**Pittsburgh** Food desert	**Old Fourth Ward** Not a food desert
• A&P (Metropolitan Parkway) • Winn-Dixie (Metropolitan Parkway) • Big Star Food Store (Cleveland Avenue)	• Big Star Food Store (Ponce de Leon Avenue)	*None*	• Kroger (Ponce de Leon Avenue) • Publix (Piedmont Ave) • Publix (Ponce de Leon Avenue)
Source: Atlanta Directory 1981 for 1980 locations and Mergent Business Database for 2010 locations.			

[16] The Atlanta Directory for 1980 was unavailable in the Atlanta Public Library holdings.

The story of how Pittsburgh lost grocery stores while the Old Fourth Ward gained grocery stores must also be understood within the context of the supermarket industry in Atlanta. Throughout the 1980s, Kroger Co. dominated the grocery market in Atlanta, namely because it was one of the leading national chains that outpaced smaller chain stores. Other competitors in the Atlanta market included A&P, Winn-Dixie, Cub Foods, Big Star Food Stores, and Piggly Wiggly. This relatively stable market environment was drastically changed in 1992 when Publix Supermarkets announced that it would enter the Atlanta market. From 1993 to 1996, Publix gained an impressive 15 percent of Atlanta's grocery market (Figure 22). Over that same period, Winn-Dixie's share of the market fell from 20 percent to 13 percent, and A&P similarly fell from 8 percent to 6 percent. By 1999, A&P had left the market entirely, selling many of its Atlanta stores to Kroger and Publix. That same year, Publix's share of the market had increased to almost 22 percent. For its part, Winn-Dixie remained in the market until 2005 when the company decided to close its Atlanta stores. By comparison, in 2005 Publix captured 26 percent of the market and Wal-Mart, having entered the Atlanta area in 1999, captured 18 percent. By 2010, Kroger's long time reign as the metro area's number one grocer was over as Publix surpassed Kroger by capturing just over 26 percent of the market. The story depicted in Figure 2 illustrates how the supermarket industry in Atlanta consolidated over time into just a handful of grocers. In the process, smaller chains and independent stores were largely pushed out of the market.

When considered in tandem, the list of grocery stores in the case study neighborhoods in 1980 and 2010 and the graph illustrating supermarket consolidation pose an important question: how did consolidation of Atlanta's supermarket industry

shape the food access of the Old Fourth Ward and Pittsburgh? Put another way, how did the Old Fourth Ward evade food desert status by 2010, while Pittsburgh did not, in the same market context where large supermarket chains were gaining a greater share of Atlanta's grocery market? These questions are addressed in the process of answering the main research question, which asks how market actors, state actors, and community groups shaped food access in Pittsburgh and the Old Fourth Ward from 1980 to 2010.

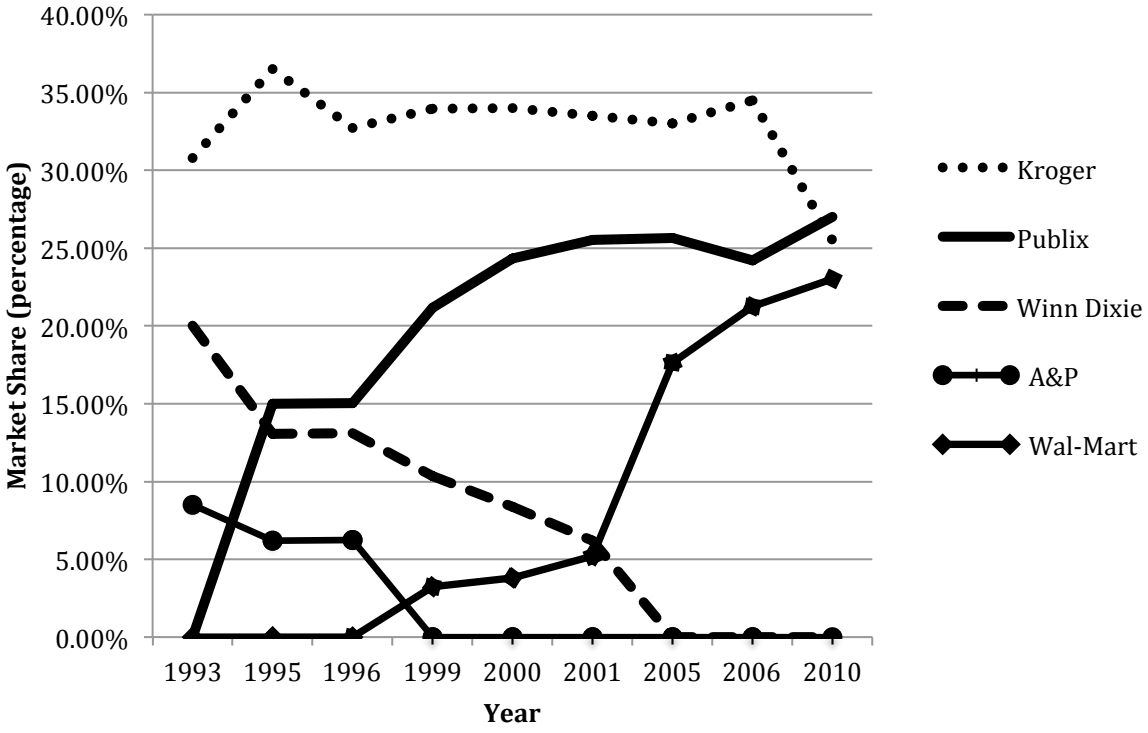

Figure 22 Metro Atlanta Grocery Market Share, 1993 – 2010

Source: The Shelby Report of the Southeast as reported in Roush (1995), Roush and Kempner (1996), Bond (1999a), Harte (1999). DeGross (2001), DeGross (2002), Van Dusen (2005), Ramos (2010).

Data and Methods

Three main actors are considered important for this analysis and include the market and business actors, the state, and community-based actors and organizations. The

first actor reflects the movement of investment capital in the neighborhood. These actors include developers, community development organizations, investors, and supermarket companies. The second actor, the state, includes the influence of local political regimes, including the Atlanta City Council (in passing zoning laws for retail development, for example), and the partnerships between public and private business entities. The third actor is comprised of community residents and community-based organizations that have negotiated their local food environment including the conditions that impede or facilitate local food access, and the opening and closing of local supermarkets and grocery stores. All three actors were identified in neighborhood redevelopment plans, neighborhood planning unit meeting minutes, and number of retail and residential development projects within the neighborhood boundaries.

A total of twenty redevelopment plans were coded using the qualitative data management and analysis software Dedoose[17] (see Table 12). A total of six plans were directly related to the Old Fourth Ward and six plans were related directly to Pittsburgh. Additionally, eight plans were related to Atlanta as a whole and had sections of the plan that explicitly included one or both case study sites.

Initially, a total of fifty-four codes were used with "brownfields," "sustainability," and "relocation," being added after reviewing the documents (see Table 13). These codes were applied a total of 1,425 times resulting in 803 excerpts from the data. The codes for "industry," "opposition to redevelopment," "Whole Foods," "TAD championed by CBO," "TAD championed by government," "UEZ championed by CBO," and "UEZ

[17] This is a web-based platform accessible at www.dedoose.com.

championed by government" were not applied anywhere in the process of analyzing the data.

Table 12: Redevelopment Plans

Name	Year	Author
Old Fourth Ward		
Livable Centers Initiative	2001	Central Atlanta Progress Georgia State University Historic District Development Corporation The Housing Authority of the City of Atlanta, Georgia
Eastside Atlanta Redevelopment Plan and Tax Allocation District	2003	Eastside Atlanta Stakeholders Huntley & Associates
Ponce de Leon Moreland Avenue Corridor Study	2005	Tunnell-Spangler-Walsh & Associates Grice & Associates Market + Main URS Corporation
Butler-Auburn Redevelopment Plan	2005	Urban Collage, Inc. Huntley & Associates Market + Main
The Old Fourth Ward Master Plan	2008	Tunnell-Spangler-Walsh & Associates
Atlanta Beltline Master Plan Subarea 5 Freedom Parkway Historic Fourth Ward Park Master Plan	2009	EDAW, Inc. Arcadis US APD Solutions
Pittsburgh		
Summerhill Redevelopment Plan Update	1993	The City of Atlanta Bureau of Planning Summerhill Community
Pittsburgh Community Redevelopment Plan	2001	Urban Collage, Inc. Huntley & Associates Altamira Design and Common Sense CHJP and Associates
Mechanicsville Community Redevelopment Plan Update	2004	Urban Collage, Inc. Marketek & Davidson Consulting
Tax Allocation District for the Stadium Neighborhoods	2006	City of Atlanta Atlanta Development Authority
Pittsburgh: Proud History Bright Future	2006	Georgia Conservancy
Atlanta Beltline Subarea 2 Master Plan Heritage Communities of South Atlanta	2009	Tunnell-Spangler-Walsh & Associates Smith Dalia Architects
Atlanta (containing plan elements for case study sites)		
Central Area Study II	1998	Central Atlanta Progress
Atlanta Beltline Redevelopment Plan	2005	EDAW, Inc. Urban Collage, Inc. Grice & Associates Huntley Partners Troutman Sanders LLP Gravel, Inc.
City of Atlanta Comprehensive Development Plan	2008	City of Atlanta and Neighborhood Planning Units

Table 12 Continued

City of Atlanta Comprehensive Development Plan	1980, 1986, 1989, 1993, and 1995	Department of Planning, City of Atlanta

Table 13: Theoretically based coding scheme

Code	Description
Brownfields	Existing conditions of neighborhood include brownfield sites.
Commercial Conditions	Descriptions and evaluations of existing market conditions for commercial uses
Community Actor	Indication of community-based actor
Community Based Organization	Represented as a community-based organization
Neighborhood Association	Represented as a neighborhood association
Neighborhood Planning Unit	Represented as a neighborhood planning unit
Community Gardens	References to existing community gardens or envisioned garden space
Demographic Characteristics	Descriptions of demographic characteristics
Gentrification and Displacement	Consideration given to gentrification and displacement, or Instances of specific processes of gentrification or displacement
Geographical Boundaries	Descriptions of geographic or political boundaries
Government Actor	Indication of a government actor
Atlanta Board of Education	Represented as the Atlanta Board of Education
City Council	Represented as the Atlanta City Council
Federal	Represented as a Federal Agency
	HUD – Specific Federal Agency
Fulton County	Represented as Fulton County
Mayor	Represented as the Atlanta Mayor
State of Georgia	Represented as the State of Georgia
Government and Business Coalition	Indication of public sector and private sector forging or acting on a shared vision or strategy for redevelopment
Market Actor	Indication of a market actor
Community Development Corp	Represented as a community development corporation
Developer	Represented as a developer
Industry	Represented as a sector of industry
Investor	Represented as an investor or group of investors
Neighborhood Disinvestment	References to neighborhood disinvestment, generally
Causes	References to believed cause of disinvestment
Descriptions/Characteristics	Specific and detailed descriptions of disinvestment
Old Fourth Ward	Statements that specifically reference Old Fourth Ward
Pittsburgh	Statements that specifically reference Pittsburgh
Redevelopment	References to redevelopment, generally

Table 13 Continued

Challenges to Redevelopment	References to barriers to redevelopment plan implementation
Commercial/Retail	References to commercial/retail strategies
Grocery Retail	References to commercial/retail strategies that specifically include grocery retail
Justifications/Reasons Given for Redevelopment	Justifications for redevelopment
Opposition to Redevelopment	Instances or occurrences of opposition to redevelopment strategies
Residential Development	References to residential development strategies
Strategies for Redevelopment	References to overall approaches to redevelopment
Visions/hopes of redevelopment	Specific visions or hopes for redevelopment initiatives
Relocation	Instances of relocation of residents before or after redevelopment
Residential Conditions	Descriptions of residential market conditions
Slum Designation and Clearance	References and descriptions of slum conditions and clearance activities
Supermarket	Indications or descriptions of supermarket in study area
Kroger	References to Kroger supermarket
Publix	References to Publix supermarket
Whole Foods	References to *Whole Foods*
Sustainability	Descriptions of redevelopment strategies that are based on environmentally sustainable principles
Tax Allocation District	References to the use of TAD as redevelopment strategy
Championed by CBO	TAD strategies advocated by community based organizations
Championed by Developer/Investor	TAD strategies advocated by developer or investor
Championed by Government	TAD strategies advocated by government actors
Urban Enterprise Zone	Reference to the use of UEZ as a redevelopment strategy
Championed by CBO	UEZ strategies advocated by community-based organizations
Championed by Developer/Investor	UEZ strategies advocated by developer/investor
Championed by Government	UEZ strategies advocated by government

To provide background and context to the two case study sites, a total of 128 newspaper articles from sources covering Atlanta politics, neighborhood issues, and the city's business landscape were also reviewed. These sources include *Creative Loafing*, a weekly publication, *The Atlanta Journal and Constitution* (which later became the Atlanta Journal-Constitution), and the *Atlanta Business Chronicle*. Other sources, like the Lakeside, Florida-based *The Ledger*, were also included when the content of the

article seemed relevant to the discussion. News articles that addressed the role of market actors, government actors, and community-based organizations in the development of supermarkets across Atlanta were included. Towards this end, newspaper databases and archives were searched using key terms such as "supermarket," "grocery," "food desert," and "food retail." Additionally, search terms were used for specific supermarket companies that proliferated throughout Atlanta, such as "A&P," "Big Star," "Winn Dixie," "Kroger," and "Publix." This explicit focus on supermarkets narrowed the data to events in Atlanta's recent history that were directly related to food access and involved, to varying degrees, market, government, and community-based actors.

Findings

In this section, I review the total counts for each code by neighborhood, including co-occurrences of codes, as a preliminary indication of possible interaction between actors and political, economic, and social conditions. Additionally, I provide an overview of the supermarkets located in each of the two case study sites in 1980, when they did not meet food deserts status, and in 2010 when Pittsburgh met the food desert status and the Old Fourth Ward neighborhood did not. Overall, this section is meant to provide an overview of what was found in the data and to explore preliminary relationships between actors that the proceeding sections of this chapter will investigate further.

Counts for each code were sorted by neighborhood. Table 14 lists these codes and sorts them by Pittsburgh and Old Fourth Ward redevelopment plans, using white or blank space to represent a zero code count, blue to represent a relatively low code count (when compared to all codes), green to represent medium code count, and red to represent a high code count. Using this categorization, the codes that received significant counts

include “challenges to redevelopment,” “commercial/retail,” “residential development,” “strategies for development,” and “visions/hopes for development.” The code count distribution is hardly surprising, given that the general understood purpose of a redevelopment plans is to lay out a vision for the future, asses the challenges that may prevent that vision from being realized, and to forward strategies for revitalization that include commercial and residential development projects. Additionally, the chi-squared test was used as a measure of association between the two categorical variables of Pittsburgh and Old Fourth Ward in this coding scheme. The test itself is based on a comparison between the observed counts for each code and the counts that would be expected by chance as a function of the number of cases in each sub-group (Dedoose 2014). In this code count table, the degree of freedom is 53 (54 codes minus one multiplied by two neighborhood categories minus one) and the chi-square test result would have to meet or exceed 43.188 to be interpreted as being statistically significant with 95% confidence (Dedoose 2014). For this code count, the chi-square test result is 114.46 and allows us to reject the null hypothesis that the two variables are independent. This implies that there is a statistically significant relationship between code count differences between each neighborhood.

Table 14: Code Count for Pittsburgh and Old Fourth Ward Redevelopment Plans, 1980 – 2009.

Code	Pittsburgh	Old Fourth Ward
Brownfields	3	
Commercial Conditions	7	3
Community Actor	11	11
Community Based Organization	2	
Neighborhood Association	3	1
Neighborhood Planning Unit	4	4

Table 14 Continued

Community Gardens		3
Demographic Characteristics	38	29
Gentrification and Displacement	9	16
Geographical Boundaries	1	24
Government Actor	8	8
Atlanta Board of Education		1
City Council	3	3
Federal	2	
Fulton County		
HUD	1	2
Mayor	1	1
State of Georgia	2	
Government and Business Coalition	9	22
Market Actor	14	6
Community Development Corp	4	1
Developer		7
Industry		
Investor	3	
Neighborhood Disinvestment	3	10
Causes	5	6
Descriptions/Characteristics	13	17
Old Fourth Ward		1
Pittsburgh	9	
Redevelopment	11	25
Challenges to Redevelopment	40	30
Commercial/Retail	58	63
Grocery Retail	11	18
Justifications/Reasons Given for Redevelopment	1	5
Opposition to Redevelopment		
Residential Development	49	43
Strategies for Redevelopment	66	128
Visions/hopes of redevelopment	26	37
Relocation	5	4
Residential Conditions		1
Slum Designation and Clearance	6	8
Supermarket	2	5
Kroger		4
Publix		1
Whole Foods		
Sustainability		4
Tax Allocation District	22	12
Championed by CBO		
Championed by Developer/Investor		1

Table 14 Continued

Championed by Government		
Urban Enterprise Zone	9	6
Championed by CBO		
Championed by Developer/Investor		
Championed by Government		

There are two important points illustrated by the code count for redevelopment plans for each neighborhood. First, redevelopment plans for Pittsburgh had 40 instances for challenges to redevelopment and the Old Fourth Ward plans had 30 instances under this code. This indicates that plans for Pittsburgh contained comparatively more references to barriers for redevelopment than plans for the Old Fourth Ward. Challenges to redevelopment spanned financial and demographic factors. For example, in the Atlanta Beltline Subarea 2 Master Plan (2009), Tunnell-Spangler-Walsh & Associates and Smith Dalia Architects explain that challenges to redevelopment in Pittsburgh are social issues, "including involuntary displacement [of residents], affordable housing, and job opportunities." The Pittsburgh Community Improvement Association (Hoffman 2006) listed challenges to redevelopment including, "drugs, prostitution, juvenile malfeasance…homeless population, drop-out rate…[and] unemployment" among several other social issues. The Pittsburgh Community Redevelopment Plan (2001) described vacant properties as "one of the most visible and challenging problems…[that] attract homeless persons in need of shelter, lower community morale, [and] suppress neighboring property values."

In contrast, plans for the Old Fourth Ward had fewer codes for challenges to redevelopment and the barriers described are different in quality in that refer less to social issues and more to the details of development. For example, in the Livable Centers Study (2001), barriers to redevelopment included zoning ordinances that "do not allow for

density that makes a difference resulting in a suburban housing product as opposed to an urban housing project." This plan also cited

> "the City building permit and rezoning process complex and lengthy, adding additional costs to projects. This, combined with high land costs, makes it difficult for all but the most innovative and dedicated investors to work in the planning area."

The Livable Centers Study also cited coordination between public and private entities on development projects and consensus among stakeholders as other challenges. Finally, the Old Fourth Ward Master Plan (2008) also stated that connectivity and street patterns made it difficult to attract development to the area. Ultimately, even though both neighborhoods had plans that detailed barriers and challenges to redevelopment, Pittsburgh had more counts for this code than did the Old Fourth Ward by a difference of 10 codes.

The second point illustrated by the code count table is that plans for the two neighborhoods had disproportionate references to "strategies for redevelopment", otherwise understood as approaches and methods for implementing redevelopment plans. Redevelopment plans for Pittsburgh had 66 counts for this code, while the Old Fourth Ward had 123. For example, the Tax Allocation District for the Stadium Neighborhoods (2006) plan suggested that a successful redevelopment initiative in Pittsburgh would require efforts to build "an environment conducive to attracting major private investment." The plan also understood public and private resources as necessary to "encourage intensive mixed-use development in live/work/play environments close to transit." Additionally, the Pittsburgh Community Redevelopment Plan (2001) suggested that "the most powerful means available to any local municipality in effecting change in

older urban areas is the use of official Urban Redevelopment Powers," which required that Pittsburgh receive an official designation as a blighted neighborhood.

Alternatively, the Old Fourth Ward redevelopment plans have approximately 50 percent more codes for "strategies for redevelopment." Many of these coded excerpts outline similar strategies for redevelopment that include public and private investment for mixed-used residential development, a factor explored in greater detail below. For example, the Livable Centers Study suggests that the neighborhood has a variety of mechanisms to recruit businesses and residents including, "enterprise zones, federal empowerment zones, tax allocation districts (TADs), tax credits and other funding mechanisms."

Overall, the important point here is that plans for the Old Fourth Ward disproportionately contain more content on strategies, approaches, and methods for implementing redevelopment plans. In contrast, Pittsburgh plans have slightly more content on barriers and challenges to redevelopment initiatives. When considered together, these counts indicate that community development corporations and developers who authored these redevelopment plans considered Pittsburgh as a neighborhood rife with challenges to redevelopment while considering the Old Fourth Ward as a neighborhood full of opportunities to implement approaches and strategies to redevelopment.

It may be more insightful to investigate the co-occurrence of codes, or how often one code is used with another. There are two important relationships that stand out as significant for this analysis. First, the codes, "strategies for redevelopment" and "government and business coalition" were coded jointly a total of 30 times in both sets of

neighborhood plans (Figure 23). For the "government and business coalition," which can also be described as "public-private partnerships," this is the most co-occurrence with any other code in the scheme. This relationship indicates that there is a strong possibility that public-private partnerships are central to the redevelopment strategies for both Pittsburgh and the Old Fourth Ward. Second, "commercial and retail," co-occurs with "residential development" a total of 42 times, "strategies for redevelopment" a total of 61 times, and "visions of redevelopment" 27 times. This indicates that the redevelopment plans for Pittsburgh and the Old Fourth Ward contain language and strategies that rely on commercial and retail development alone and also in conjunction with residential development. Indeed, as the data will further demonstrate, this dual strategy of linking commercial and residential development has been the predominant strategy put forth by both Pittsburgh and Old Fourth Ward redevelopment plans.

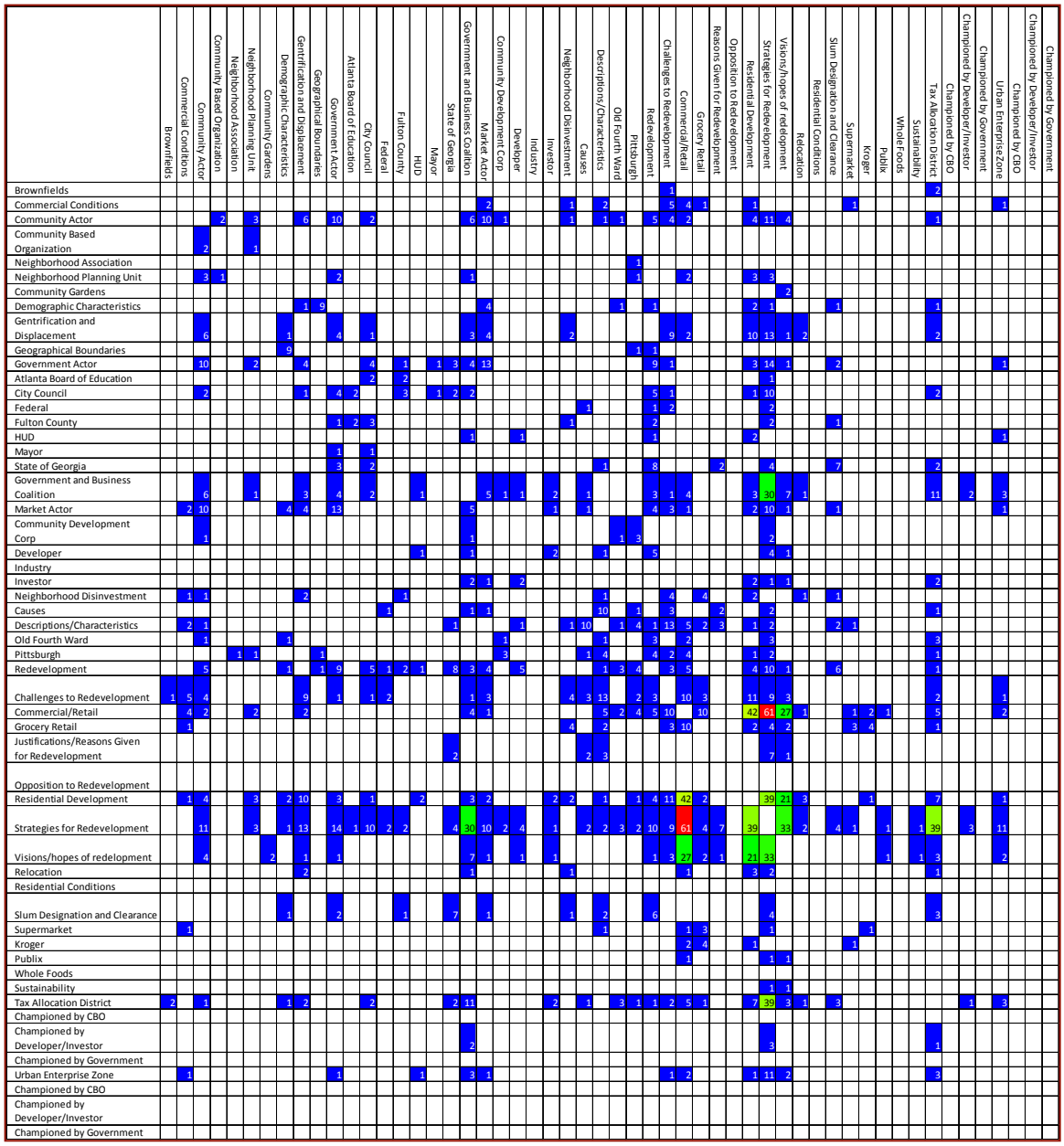

Figure 23 Redevelopment plans code co-occurrence.

The code counts and co-occurrences in figure 23 provide an indication of where possible processes and relationships might be influencing the development of supermarkets. The task now is to follow these indicators down to the redevelopment plans themselves and to understand the relationships between market, state, and community actors in the context of neighborhood revitalization efforts. In the next

section, I turn to the data – neighborhood redevelopment plans, newspaper articles, city council resolutions, and NPU-minutes – in order to provide a deeper analysis of the processes and decision points that have produced a food desert and a non food desert out of two seemingly similar neighborhoods in downtown Atlanta.

Analysis

Through a qualitative analysis of the salient and reoccurring themes found in both the redevelopment plans for Pittsburgh and the Old Fourth Ward and news accounts of development projects, there are three significant themes. First, Atlanta's supermarket industry was relatively stable throughout the 1980s, but when the Florida-based Publix came to the city in 1992, the market was destabilized. As a result, many new supermarket stores were built in the northern suburbs of Atlanta and smaller grocers in south Atlanta – like the ones that were located new Pittsburgh – closed down. Second, when redevelopment initiatives did arrive in the Old Fourth Ward, the primary strategy was based on public-private redevelopment of mixed-use retail and commercial development. These strategies have largely used market-rate housing units to bring in new residents into downtown neighborhoods, a strategy that has been largely criticized for its displacement of low-income and poor incumbent residents. Finally, although some community-based groups were able to codify their supermarket access concerns in redevelopment plans, they have been largely unsuccessful in shaping the commercial elements of redevelopment initiatives. Each of these themes are explored and supported below.

Market Actors: Atlanta's 'Supermarket War' and the Race for the Suburbs

Supermarket chains shaped where grocery stores were developed across Atlanta and in the neighborhoods of the Old Fourth Ward and Pittsburgh from 1980 to 2010.[18] Atlanta's grocery market increased from $4 billion in the 1990s to $7 billion in the mid-2000s, and supermarkets have tried several strategies over the years to increase their share of it. While competition in the market was relatively stable throughout the 1980s, with Kroger in place as the number one grocer in the metro area, there were notable disruptions in this stability in the 1990s and in the 2000s. These disruptions include an increase in supermarket stores across Atlanta in what was dubbed by analysts and reporters alike as the 'supermarket wars' that began in the early 1990s. Importantly, these shifts demonstrate how supermarkets used a location strategy based on considerations of class and income to build their stores, a strategy that ultimately left poor and non-white neighborhoods without supermarket access.

Throughout the 1980s, Atlanta's supermarket players were stable and predictable and not many new supermarkets were built throughout the decade. At that time, the big three supermarkets in Atlanta were Kroger (based in Cincinnati, Ohio), A&P (owned by the Great Atlantic & Pacific Tea Co. and based in Montvale, New Jersey), and Winn-

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[18] Not all supermarkets that have vied for Atlanta's food dollar are competing in the same market segment. For example, Harris Teeter and Bruno's have filled Atlanta's high-end specialty grocer sector, supercenters like the once-prominent Big Star and Wal-Mart have occupied the wholesale deep-discount grocery sector, and the now-defunct A&P, Kroger, and Publix have all historically carved out their stake in residential supermarket formats often supported by a network of regional distribution centers.

Dixie (based in Jacksonville, Florida). Piggly-Wiggly was also a local favorite. By a large margin, the dominant supermarket in Atlanta was Kroger.

During the 1980s, Kroger boasted a total of 65 stores throughout the region, including a store (built in 1985) on the northern border of the Old Fourth Ward on Ponce de Leon Avenue, the corridor that separated the neighborhood from the white, upper-income area of Virginia Highlands (Burritt 1991: 1)[19]. That same decade, Pittsburgh had a nearby Kroger, Winn Dixie, A&P, and a Big Star Food store within a mile and a half from the neighborhood. It also had convenience stores and corner stores selling primarily prepackaged goods, candy, soda, and liquor. Both neighborhoods in the 1980s, when assessed using the standards for food desert status set by the USDA, were not entirely food deserts.

This landscape changed drastically in the early 1990s when a privately-owned supermarket chain based in Lakeland, Florida – Publix – announced that it was planning on entering Atlanta's then-$4 billion market (Editor 1992: 1). It was clear from the beginning that Publix was aiming to be the top supermarket chain in Atlanta; the company had plans to build "enough stores to compete with the area's biggest chains, including number one Kroger (Burritt 1991: 1). The arrival of Publix – already a major chain on the national scene, meant that some smaller chains would likely be pushed out and that the competition for customers would intensify. Atlanta's premier daily

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[19] Nationally, Kroger Co. was also capturing a large share of the grocery market. In 1989, Kroger Co. had a total of 2,187 stores making nearly $19 billion a year (Albright 1991: 1I). By comparison, the Great Atlantic & Pacific Tea Co. had 1,208 stores nationwide with $11 billion in sales a year and Winn Dixie had 1,236 stores with approximately $9 billion in sales (Albright 1991: 1I).

newspaper, the *Atlanta Journal and Constitution*, heralded the coming of Publix as the start of Atlanta's supermarket 'war' and ran stories sensationalizing the pending rivalry and predicting major loses for smaller grocers in the metro area.

The entrance of Publix into Atlanta's grocery scene in the early 1990s places supermarket development into sharp focus. With the chain's arrival, we can clearly see how supermarket companies used a geographical location strategy for their new stores that consistently bypassed low-income, poor, and non-white neighborhoods in south Atlanta. It was not only Publix, either. With the new competitor, Atlanta's other dominant chain – Kroger – began building new stores and redeveloping older ones following the same geographical strategy that prioritized majority white and upper-income neighborhoods. As Figure 24 illustrates, Atlanta's many supermarkets (including Kroger, Publix, and others) in 2010 were disproportionately located in the northern areas of the city.

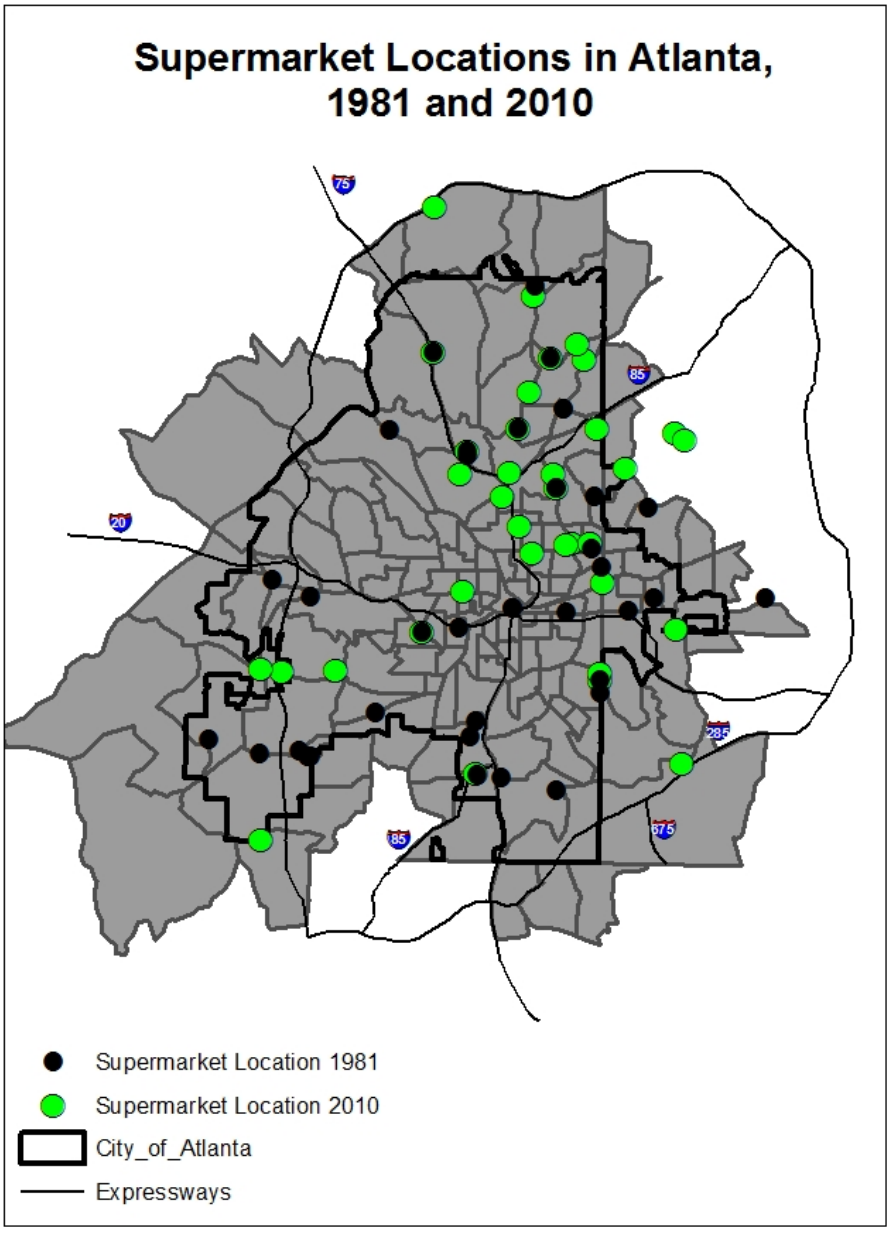

Figure 24 Supermarket Locations in 1980 and 2010.

From the outset, Publix's strategy was to overtake Kroger as the number one supermarket chain in Atlanta, and it did this by focusing first on locating its stores in the

high-income and majority-white suburbs of Northern Atlanta.[20] When the company released its first planned sites the pattern of the stores formed a ring north of the city, "skipping the slower growth and higher real estate costs of the central city" (Holsendolph 1992: 3)[21]. In particular, Publix planned its first four sites in the northern counties of Cobb and Gwinnett (Burritt 12/22/1991: 1). The first Atlanta store opened in Marietta, a city in the northern county of Cobb. Shoppers flooded the 65,000-square-foot store on opening day, November 15, 1992 (Murray 1992a: 2). In March and December of 1993, Kroger scheduled to open its second and third store, respectively; both were in Cobb County (May 1992: 3). "Traditionally," explains Salter, "supermarket chains moving into new markets have been able to lease stores in shopping centers that developers built and owned" (1992: 2). When Publix decided to enter Atlanta's market, developers had a difficult time finding the financing needed to build stores to lease out to Publix (Salter 1992: 2). As a result, for some of Publix's first stores in the Atlanta market, the company had to build and own its own stores, reinforcing the company's need for a guaranteed profitable strategy. The Publix strategy for developing its stores was unmistakably clear: build in the northern suburbs. Developers were notably impressed by Publix's keen location strategy (Murray 1992e: 1). "By locating outside I-285 [the highway that loops around the downtown area of Atlanta]," a development analyst surmised, "the chain is

[21] By far, the strongest retail property type in the mid-1990s was the neighborhood shopping center, which typically had a grocery store as an anchor tenant and proliferated across Atlanta's suburbs. This format suited Publix. This growth had been based on the population growth in outer-suburban locations (Watson 1996). From 1991 to 1996, Publix opened at least forty new stores in newly developed shopping centers (Watson 1996). With Kroger and Publix combined, more than 5.3 million square feet of shopping center space anchored by a supermarket had been added between 1993 and 1996, the majority of which were in the northern suburbs of Atlanta (Watson 1996).

avoiding high-priced land and shoulder-to-shoulder supermarkets inside the Perimeter" (Murray 1992e: 1).[22] In this initial entry into Atlanta during the early 1990s, the closest Publix came to placing a store downtown below the Perimeter was a store in Buckhead, a wealthy, business-centric enclave located in north Fulton County (Murray 1992d: 12). Kroger followed Publix's lead. The chain planned on replicating Publix's northern strategy in the development of its new stores so that it could take advantage of "growing market areas with affluent populations" (Vesey 1993a: 1). The area's top supermarket chains were waging a war strategy that relied on bypassing non-white and poor neighborhoods[23].

One important implication of this supermarket location strategy for low-income and minority neighborhoods was the closure of independent grocers and smaller chains who could no longer compete with Publix or Kroger.[24] Four years after Publix's entered

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[22] Atlanta I-285 encircles the city of Atlanta. For those in Atlanta, areas located inside the loop are known colloquially as "inside the perimeter," while areas outside of the loop are known as "outside the perimeter."

[23] Some developers tried to entice supermarkets elsewhere, however. For example, John R. Perlman, an Atlanta retail developer secured options to buy land in southeast Atlanta in the Grant Park neighborhood, an area "long bypassed by major retailers…who preferred the demographics of Atlanta suburbs" (Murray 1996). Previously, retailers and developers would study Grant Park's census tracts and see a mix of people living in $175,000 homes with those who lived in the nearby housing project. This "skewed median-income level turned off major retailers" and prevented major grocery chains from locating in the area (Murray 1996). Perlman's reframing of the area's retail potential came at the same time that Kroger was slated to open up a store near downtown. Brad Wood, Kroger's assistant real estate manager at that time explained the company's position, "obviously, we're a public company that answers to shareholders, so we're not going to open a store that loses money" (Murray 1996). However, as Wood noted, "we're trying to go beyond the formulas and be creative to make these intown stores work" (Murray 1996).
In the Glenwood Park development near Grant Park in the southeast part of the city is one notable example of how the developer, Charles Brewer, purposefully excluded a supermarket from his vision. In this mixed-use development site, "none of the spaces…are big enough for a grocery store such as Publix or Kroger" (Wall 2005). Ultimately, the design is only attractive to residents who have the financial means and transportation to travel out of the neighborhood and on the highway to get their groceries.

[24] Cascade, a predominantly black middle-class neighborhood in southwest Atlanta also experienced a "drought of grocery stores" throughout the 1980s and early 1990s (Parker 1993: 4). This changed in 1994 when not one, but three grocery stores – Bruno's, Publix, and Kroger – announced sites for the area that

the Atlanta market, the supermarket war began to take a toll on the region's smaller supermarket chains and independent grocers. In 1995, Kroger remained the number one grocer in Atlanta, capturing 32.65 percent of the market (Figure 5). As a testament to just how successful Publix's northern suburb strategy had been, Publix jumped to the number two spot and claimed 14.99 percent of the market share (Roush 1995: 1F). Winn-Dixie (number three in Atlanta's grocery market at the time), had 13.06 percent, and A&P was at fifth place with 6.2 percent of the market (Roush 1995: 1F). A year later in 1996, the scoreboard remained relatively stable, with Kroger retaining its number one seat (Roush 1996a: 2C) and Winn-Dixie slashing prices in a desperate attempt to remain competitive (Roush 1996b: 1F). In 1997, Winn-Dixie was finally showing sure signs of a steady decline as its market share fell nearly two percentage points since 1995. That same year, A&P, Ingles, and Bruno's collectively captured less of the market than the trio had a year earlier (Murray 1997). Overall, the number of metro Atlanta supermarkets grew from 378 in 1995 to 411 stores in 1996, with much of that growth attributable to Kroger's and Publix's northern suburb expansion (Murray 1997). Although Winn-Dixie had made plans to open up five new stores outside the Perimeter in 1999, it fell far behind Kroger and Publix's share of Atlanta's market (Wilbert 1999: 2C; DeGross 2000b: 4G).

While Kroger and Publix built new stores in the northern sections of metro Atlanta, other chains closed their doors. These chains were the very ones who operated stores in working class neighborhoods of Atlanta, including stores near downtown and in the southern parts of the city in areas where new Kroger and Publix development

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were all set to open in 1994. "After years of being ignored," wrote Parker, "residents of the predominantly African-American area generally welcome the shower of sudden attention" (Parker 1993: 4).

neglected. The Pittsburgh neighborhood lost all their local grocery stores including the Winn Dixie, A&P, and Big Star Foods. In 1998, Bruno's sold its Atlanta stores to Ingles and a year later in 1999, A&P announced that it would close or sell all of its Atlanta stores; most were bought by Publix or Kroger (Bond 1999a: 1D; Circelli 1999a: 1A; Bond 1999b: 3D; Bond 1999c: 1D; Circelli 1999b: 1E). Just a few years later in 2001, Kroger would buy out all of Harris Teeter stores (DeGross 2001: 1D).

In the mid-2000s, Atlanta's downtown residents saw some of the leading grocers close their doors as some stores became less profitable.[25] The Westside Village Publix location, which opened in 2002, closed its doors on Christmas Eve 2009. After seven and a half years, the company said that the city and developers had failed to make good on promises of a $140 million mixed-use development in the area. A Publix spokeswoman explained that the "company's decision to close the West Side Village location comes down to economics and broken promises" (Suggs 2009: 1B). For west Atlanta residents, "many of whom are seniors or lack reliable transportation to buy daily necessities," the closure of the market meant food insecurity.

As a result, while new supermarket chain stores opened up in Atlanta's northern suburbs, many neighborhoods in south Atlanta suffered on two fronts. First, these neighborhoods were bypassed by new supermarket development. Second, these neighborhoods saw many of the supermarkets that did exist in their neighborhoods close

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[25] Stores closed in the suburbs too. In the city of Norcross, Publix closed its store that analysts said had "slipped into dire straits," and "many, if not a majority of the residents are brown-skinned folk relatively new to America…[who] are working-class folk who want a better life for their families" (Badie 2006: 3J).

up shop, defeated by the supermarket wars that benefitted whiter and wealthier neighborhoods.

State Actors Partner with Market Actors to Bring Development Downtown

For all the work and negotiation between market actors, the state is also part of Atlanta's supermarket development story. State actors, including Atlanta's City Council, Atlanta Housing Authority, Atlanta Development Authority[26], county commissioners, and the state of Georgia have influenced the development of supermarkets in three key ways. First, and more straightforward, is the approval of zoning ordinances and variances by county commissioners. For supermarkets to be developed, the land needs to be zoned for commercial uses. As supermarkets heightened their expansion into Atlanta's northern suburbs, many counties had to grant zoning ordinances to permit the building process. Many of these passed without fanfare or debate, but some received resistance from community groups and homeowner's associations who wanted to protect their neighborhoods from the onslaught of unchecked commercial development. The second, and more complex, way that state actors have participated in the development of Atlanta's supermarket landscape is through funding. The main funding streams identified in the redevelopment plans are tax allocation districts and urban enterprise zones, which rely on tax incentives for developers. Finally, state actors have also regulated and shaped much of downtown Atlanta's residential development by prioritizing mixed-use

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[26] The Atlanta Development Authority, is the city's official community redevelopment agency that facilitates public and private reinvestment initiatives, acquires public and private land, provides relocation assistance to residents where required, and provides administrative and legal functions to develop land development agreements and enforces redevelopment controls (Georgia Conservancy 2006).

development and the displacement of Atlanta's public housing residents. The two latter issues involving the state, funding and residential development using mixed-use development, will be considered here.

State actors have used various means to fund the development of commercial and residential projects across Atlanta. For example, in 1993, then-Atlanta Mayor Maynard H. Jackson asked Publix to consider putting a store in the West End area of Atlanta to bolster the economic vitality of the neighborhood (Editor 1994: 1). Before Publix agreed, it asked the city to commit to making some improvements. Seven years later, Atlanta officials announced a $130 million Historic Westside Village redevelopment project, including a Publix store, 40 townhouses and 120 loft condominiums selling between $150,000 to $275,000, restaurants, shops, and a movie theater (McCosh 2000: 1C). The project was a partnership between the Atlanta Development Authority, Harold A. Dawson Co., and Egbert Perry's Integral Group. Importantly, financing for the project came from a combination of conventional loans, bond financing, and Atlanta Empowerment Zone funding. The project's envisioned new residents were not the residents who had lived in the area, since many could not afford the proposed housing units. As McCosh (2000: 1C) notes, "within a mile radius of Historic Westside Village, nearly 30 percent of residents had a household income of less than $15,000 last year, and another 20 percent had a household income of less than $5,000." In many ways, therefore, state agencies and developers were going towards an "empowerment" project that would be inaccessible for the majority of the area's incumbent residents.

In addition to sanctioning tax-based funding streams, state actors have also been instrumental in Atlanta's residential development and displacement of poor residents. In

1992, a congressional commission, through the auspices of the U.S. Housing and Urban Development, created HOPE VI. The main thrust of the program was simple: substandard and dilapidated public housing units would be torn down and new ones would be built in their place, complete with clean and safe professionally managed amenities and landscaping. The catch was this: a number of the new units had to be reserved for middle-class families at the market rate to ensure that pockets of poverty would be dispersed. The program was called the Home Ownership and Opportunity for People Everywhere, nicknamed HOPE VI because it was the sixth official attempt at reforming public housing (Shalhoup 2002). Under the leadership of Renee Glover, the Atlanta Housing Authority tore down public housing units across Atlanta, including the neighborhoods around Centennial Olympic Park, East Lake, Castleberry Hill, and at Techwood. To create mixed income communities, returnees had to meet new higher standard and requirements. Poor credit ratings, court convictions in the past five years, unpaid or late utility bills, and any drug conviction would prevent residents form returning to their neighborhood (Shalhoup 2002). Other public housing residents received a housing voucher, which paid the "rent of up to 30 percent of their income, and the government pays the landlord the difference" (Shalhoup 2002). Yet, many found it hard to find a landlord who would accept the voucher. In short, HOPE VI, and AHA's willingness to execute the program so thoroughly throughout the 1990s and 2000s, systematically cleared poverty from downtown neighborhoods, ultimately paving the way for developers to see downtown as a blank slate to develop mixed-use projects without having to clear out poverty first.

The second issue involving a partnership between state actors and market actors is mixed-use development downtown, which had direct implications for supermarket locations. Having saturated the suburban market, the focus of Atlanta's major supermarket chains shifted from the northern suburbs and towards the market potential of the inner city. At the turn of the century, the supermarket war raged on between Kroger and Publix but the location strategy for the chains shifted drastically. Publix and Kroger, in response to increasing real estate prices and the limited availability of land, moved away from building warehouse-sized supermarkets (DeGross 4/4/2000: 1C). Rita Owens, Publix's spokeswoman commented, "real estate is hard to come by," and confirmed that the chain was ready to try new compact stores more suitable for downtown locations (DeGross 2000c: 1C). Chuck Gilmer, editor of the *Shelby Report*, a grocery trade publication, confirmed the new strategy of Atlanta's supermarket landscape, "as the suburbs fill up and grocers have these areas covered, they are looking … to move downtown and in urban areas" (DeGross 2000c: 1C). Therefore, the early 2000s marked a notable shift in Atlanta's supermarket landscape, one that included a strategic move away from the northern suburbs of the city and refocused development efforts towards downtown neighborhoods.[27]

Rather than use the 'big box' style shopping center development strategy that worked in the suburbs, downtown development began to use mixed-use development

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[27] Additional shifts were to also occur that changed the players in Atlanta's fierce supermarket competition. German-owned grocery chain, Aldi, planned to enter Atlanta's market in 2001 and Whole Foods, an upscale natural foods store, opened in Buckhead in 2003 (DeGross 2001: 3F; DeGross 2003: 2D). These new players did little to shake up Atlanta's market, however, and focused on capturing smaller niche markets.

consisting of both retail and residential uses. These mixed-use development projects enticed both retail tenants and middle to upper-income residents back to downtown neighborhoods.

Partnerships between state and market actors were prioritized in the redevelopment plans for the Old Fourth Ward and Pittsburgh. While public-private partnerships have been integral throughout the city's development, the approach intensified in the mid-1990s. In the 1995 City of Atlanta Comprehensive Development plan, the strategy for development in in-town neighborhoods had public-private partnerships. In particular, this strategy was chosen specifically for targeted neighborhoods including Old Fourth Ward and Pittsburgh. "The City," the plan explained,

> "seeks to increase private investment in these target neighborhood clusters by focusing on redevelopment programs and rehabilitation activities in these areas. To facilitate the leveraging of public resources, the City will work with community organizations, ANDP, local developers, and financial institutions to provide financing" (Atlanta., (Ga) Bureau of Planning 1995: 687).

Under the drive to redevelop Atlanta's low-income neighborhoods downtown in time for the 1996 Summer Olympics, Pittsburgh was grouped with Summerhill, Mechanicsville, and Peoplestown neighborhoods as part of the Olympic Stadium Redevelopment Cluster outlined in the City's 1995 Comprehensive Development Plan. The redevelopment initiatives stemming from the City's preparation for the Olympics focused primarily on these neighborhoods. The plan indicates that community-input was elicited and that residents of these neighborhoods desired "commercial revitalization to bring standard retail services, such as a bank, a full-service grocery store and a drugstore,

into the area" (Atlanta., (Ga) Bureau of Planning 1995: 586). Similarly, the Old Fourth Ward was grouped with Butler Street to form the Auburn Avenue cluster (Atlanta., (Ga). Bureau of Planning 1995: 74). That same plan named the Old Fourth Ward and Pittsburgh (among others) as priority neighborhoods for revitalization funding (Atlanta., (Ga) Bureau of Planning 1995: 89).

Notably, in contrast to the development that proliferated in Atlanta's outer suburbs, development downtown was made complicated by existing residents in public housing complexes, deteriorating infrastructure, and a weakened tax base – conditions that necessitated the participation of the state. As a result, many of the development initiatives that occurred near downtown had to contend with the question of what to do with poor and low-income public housing residents, how to win over weary investors who saw downtown development as a high-risk investment, and how to use public sector tax incentives to off-set that risk. Thus, the next turn in the supermarket war that began in the early 2000s enrolls a set of new actors, including state and federal actors, that helped supermarket development ensure desirable residents by proposing mixed-use development projects, remove public housing residents through the federal HOPE VI initiative, and secure public-sector funding through Tax Allocation Districts (TAD) and Urban Enterprise Zones (UEZ). In sum, the new downtown wave of capital investment and development required partnerships between public and private actors.[28]

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[28] If there were a comparable neighborhood example of public-private partnerships and the development of a supermarket in a historically disinvested community, it would probably be East Lake. East Lake sits just a few miles east of the Old Fourth Ward. The former public housing project, East Lake Meadows, and was once so riddled with crime, blight, and violence that residents nicknamed it "Little Vietnam" (Tofig 2001). The Atlanta Housing Authority razed East Lake Meadows in 1997 and replaced it with a public-private

Public-private partnerships were central to the redevelopment of downtown neighborhoods. In the early 2000's, developers began to take notice of the profitability of in-town neighborhoods, especially in Atlanta's Midtown neighborhood just west of the Old Fourth Ward. Developers and real estate firms began to strategize on how to revitalize the area. As Dean McNaughton, a broker with the Cushman and Wakefield commercial real estate firm, explained, "the key if downtown wants to make a comeback [is] to develop a population base" (Sugg 2003). Sugg (2003) added that McNaughton was "not referring to the poor and transients who dominate much of downtown." At that time, a lot of middle and upper-income housing development projects were being built downtown, but, as Sugg noted, the critical mass still was not there to spur commercial real estate development. Sugg described retail development in downtown Atlanta neighborhoods as "developers seek[ing] to insert stylish, specialty centers into already densely populated areas" (2003).

The redevelopment of the Rio Mall, a shopping center built in 1988 and situated on the border between the Old Fourth Ward and Midtown on Piedmont Avenue, is an example of how mixed-use development was used to develop a Publix Supermarket (Figure 24). It was, by some accounts, a grand spectacle of an outdoor shopping mall, (complete with gold-painted frogs and a geodesic dome) and even won some architectural awards in the late 1980s. By the mid-1990s, however, it was clear that the site was not as

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project consisting of a gated apartment complex (Tofig 2001). Along with the development of the new apartment complex came the installation of a BP gas station, the East Lake Family YMCA, and a Publix Supermarket. One resident, Rebecca Gray, remarked that "it seems like some health is coming back to the community…you have recreational facilities, you have grocery stores, you have places to get gas" (Tofig 2001). The construction of Publix was largely symbolic, as Tofig (2001) noted, because "big retailers don't open stores unless they think they'll make money."

lucrative as anticipated; and the consumer base that developers had hoped for had not materialized. When Publix made plans for its store on the border of the Old Fourth Ward neighborhood and Midtown, it put McNaughton's strategy into practice, right on top of the Rio Mall site. The mall itself was razed and developers, Lincoln Property Co. of Texas and the Atlanta-based Sembler Co., planned a retail center with Publix as the main tenant and an accompanying apartment complex on the back portion of the development (DeGross 2000a: 1C). The reporter covering the story for the Atlanta Journal-Constitution noticed the emerging trend, "grocers are returning to urban areas," DeGross noted, "because of the resurgence in residential developments, including several that have recently gone up in Midtown" (DeGross 2000a: 1C).

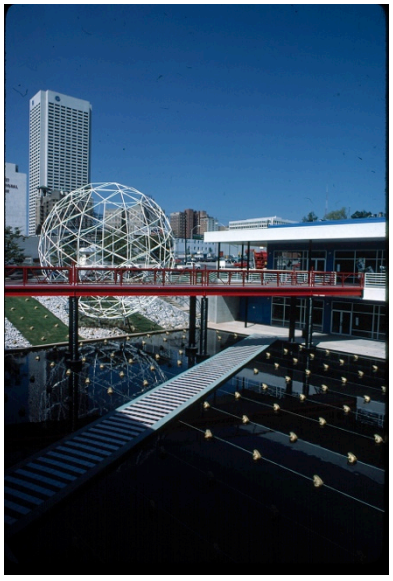

Figure 25: The former Rio Mall on the border of Midtown and the Old Fourth Ward on Piedmont Avenue. ***Source: http://www.atlantatimemachine.com/commercialbldgs/rio_mall.htm.***

Public-private development of Atlanta's downtown neighborhoods did not only change the supermarket landscape, it changed the residents who lived there. Many of the

market-rate units being built were simply unaffordable for Old Fourth Ward and Pittsburgh residents. Redevelopment using residential and commercial uses (mixed-use) required a resident base that could sustain and support the commercial uses of the project. This fundamental strategy for neighborhood development constrained the choices of redevelopment strategies and ensured that many long-time residents would not be able to live there much longer. The redevelopment plans of the Old Fourth Ward and Pittsburgh neighborhoods that were published in the mid-1990s and throughout the 2000s reflect this shift towards mixed-use development in the neighborhoods near downtown Atlanta. Although the Old Fourth Ward and Pittsburgh neighborhoods similarly viewed mixed-use development as the key for neighborhood revitalization – including commercial and retail revitalization – they experienced the reality of development in starkly different ways.

In the Old Fourth Ward neighborhood, all redevelopment plans call for public private partnerships to initiate mixed-use development projects, four of which clearly illustrate this trend. First, the 2004 Land Use Policies for Neighborhood Planning Units echoed this strategy for the Old Fourth Ward, and called for the "reuse or redevelopment of vacant, under-utilized, obsolescent, and/or structurally deteriorated industrial land and commercial properties…[and] promote mixed-use development" (Land Use Policies for Neighborhood Planning Units 2004).

Second, in the Butler-Auburn Redevelopment Plan, issued in May of 2005, the focus was on revitalizing the main business thoroughfare on the southern border of the Old Fourth Ward. The plan itself was prepared for the City of Atlanta by Urban Collage, Inc., Huntley & Associates, and Market + Main. The plan identified the Sweet Auburn

Redevelopment Agency as the entity responsible for collaborating with the private and public sector to initiate the plans' recommendations.

Third, in 2008, Tunnell-Spangler-Walsh & Associates, an Atlanta-based planning and architecture firm, created the Old Fourth Ward Master Plan. This plan was prepared for the City of Atlanta Department of Planning and Community Development, and Tunnell-Spangler Walsh & Associates labeled the plan's development recommendations as the result of collaborative efforts between residents, business, and property owners. The plan included mixed-use development as a central element of the neighborhood's revitalization. According to Tunnell-Spangler Walsh & Associates, the Old Fourth Ward was soon to be cleared of industrial land and low and medium density residential land to make way for "much higher density residential and mixed-use projects" (2008). In one notable part of the plan, Tunnell – Spangler Walsh & Associates encouraged neighborhood residents to welcome developers who would build new housing stock. The plan also touted private involvement in the upkeep and public safety efforts of the community by suggesting that an Old Fourth Ward Community Improvement District be established in which commercial property owners would pay dues into a fund that would be used for "sidewalk and street improvements, private security, park maintenance, and other improvements or redevelopment efforts" with no additional cost to the residents.

Fourth, in the Ponce de Leon – Moreland Avenue Corridor study for the Old Fourth Ward neighborhood, the plan recommended that the Kroger shopping center on Ponce de Leon Avenue, (known by many residents as 'murder Kroger' because of a murder in the store's parking lot) be redeveloped and that nearby uses follow a mixed-use development pattern (Shalhoup 2009). In fact, this plan's main stated objective was to

promote housing and mixed-use developments and redevelopments all along the major corridor of Ponce de Leon Avenue.

In Pittsburgh, a similar trend towards public-private partnerships and mixed-used development is evident in the redevelopment plans. One of the major differences separating the Old Fourth Ward from Pittsburgh is that the latter has had no successful mixed-use development model to highlight as an effective strategy, and therefore their plans rely on examples from other neighborhoods and plans. Because of this, Pittsburgh's redevelopment plans are less able to rely on previous successful development projects that have closed the rent gap; it has the burden of convincing investors that the risk of investing in the neighborhood is worthwhile without a proven track record to point to. Therefore, it is clear from the redevelopment plans that developers, investors, and lenders are seen as the partner that the neighborhood needs to convince. Aside from the redevelopment efforts stemming from the 1996 Olympics, development had not been occurring in the area, setting it apart from the experience of the Old Fourth Ward.

The case for Pittsburgh public-private partnerships and mixed-used development is made in all redevelopment plans included in this study, but three are important to highlight here. First, as the Pittsburgh Community Redevelopment Plan (2001) plan states clearly, "the success of this plan is contingent upon establishing a private market for community investment." These private sector entities include traditional lenders as well as residential and non-residential developers. The plan uses successful examples from other neighborhood redevelopment initiatives including the residential development in the Old Fourth Ward supported by Nations Bank Community Development Corporation and the Historic District Development Corporation. In this vein, the main

purpose of the plan is to "eliminate the worst conditions of blight that are currently affecting private market redevelopment" (Pittsburgh Redevelopment Plan 2001). Ultimately, according to the plan, the private sector is expected to bear most of the cost of redeveloping the Pittsburgh Community. In the Pittsburgh Commercial Redevelopment Plan, commercial uses are also envisioned, especially "neighborhood oriented businesses." On the corner of McDaniel and Mary Streets, for example, the plan intended for the site to be developed with a core of commercial properties. Again, the central idea was to insert commercial space in tandem with residential units, where possible, as part of a mixed-use development strategy. For the underutilized industrial spaces located in the neighborhood, the plan suggested that these too be converted into commercial and residential spaces.

Second, for the redevelopment plan for neighboring Mechanicsville just to the north of Pittsburgh, the "recommended" housing types for the area were descried as "newly constructive/adaptive reuse flats, townhouses…upper-level residential and live-work units" (Urban Collage 2004). The plan hoped that these housing units could sell for $150,000 to $250,000 with prices increasing as demand grows[29]. Notably, newly developed housing was seen as the key to further development: "new housing development will act as an anchor that will attract businesses, services, and activities, which in turn will enliven the overall neighborhood" (Urban Collage 2004). The plan

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[29] To back up its appeal, Urban Collage Inc. and Market + Main cite research conducted by Marketek & Davidson Consulting that found that there is an annual demand for 2,489 affordable rental units, with Mechanicsville capturing 220 of that demand; for market-rate units there is an annual demand of 3,077 units in the entire primary market with the local neighborhood capturing 113 rental units at the market rate (Urban Collage 2004).

uses other neighborhood development projects like Buckhead and downtown neighborhoods to make the case to potential investors and developers that new housing in the area will prove successful.

Third, in the redevelopment plan for neighborhoods surrounding the Atlanta Stadium, including the neighborhood of Pittsburgh, the effort to use residential development to spur economic revitalization is forwarded as the main strategy. By attracting "more market-rate housing" to the area, the level of investment will increase in the neighborhood and improve the environment "for all of the residents in the area" (TAD Stadium 2006). The plan focused primarily on "multi-family housing, with potential for some ground-floor retail" (TAD 2006). In particular, this same plan identified a lack of "neighborhood-serving retail, in the form of grocery stores or pharmacies" and noted that residents had to travel several exists east on the highway to buy necessities such as groceries (TAD 2006). This was the vision, a long way from the deteriorating state of the neighborhood's retail landscape at the time. Turner Field, acknowledged the authors of this plan, was surrounded by "under-performing and inactive commercial spaces" (TAD 2006). In many ways, it seems like Pittsburgh's revitalization hinged completely and solely on private investment, similar to the successful strategies implemented in the Old Fourth Ward. As the Pittsburgh Redevelopment Plan put it, "ultimately, without significant, market-driven private sector investment in the community, up-front public sector contributions will not be sustainable over the long-run" (Pittsburgh Redevelopment Plan 2001).

Community Actors have Limited Influence over Supermarket Locations

No redevelopment plan for either case study neighborhood directly produced the development of a supermarket. However, neighborhood redevelopment plans were based on input from community members including complaints about the lack of grocery stores and the need for more neighborhood retail options.

The redevelopment plans for Pittsburgh addressed grocery retail very clearly and directly. The Pittsburgh Community Improvement Association described the neighborhood as one that lacked "neighborhood services: grocers, laundry facilities, drug stores, restaurants, movies, [and] shopping" (PCIA). The Stadium TAD plan was more explicit. One of the core needs was an urban grocery store. According to the plan, grocery stores were identified as a critical need in numerous public meetings and the plan had suggested a large enough corner lot where a grocer could locate (TAD 2006). The Pittsburgh Redevelopment plan also cited "neighborhood commercial" uses as a need for the community. In the sub-area redevelopment plan for Atlanta's Beltline Redevelopment Project, the plan emphasized that "many of the businesses found in commercial land uses do not meet the daily needs of residents, and that basic services, such as supermarkets and drugstores, are lacking" (Tunnell-Spangler-Walsh & Associates and Smith Dalia Architects 2009).

Additionally, community residents in the Old Fourth Ward gave input into the Livable Centers Study. One resident said that they travel to Kroger about "one or two times in the month" (Livable Centers Study 2001). Another resident indicated that the neighborhood needed more people "going to restaurants and grocery stores" (Livable Centers Study 2001). Two other residents commented on the dearth of grocery retail

options noting that there is "not a major supermarket in the area" and that the area was "lacking [a] grocery store" (Livable Centers Study 2001). One resident directly connected the area's grocery gap to neighborhood sustainability by remarking that the neighborhood "doesn't have the amenities, coffee shops, grocery stores – the things that make a neighborhood livable" (Livable Centers Study 2001). When asked to rank land uses and services needed in the neighborhood, residents who were surveyed ranked "residential uses" as the top priority, with "general, larger scale commercial uses (grocery, drug)" and "entertainment (restaurants, bars, theaters)" tying for second most important (Livable Centers Study 2001). Overall, residents surveyed for the study identified a lack of basic commercial and health services in the Old Fourth Ward and indicated "grocery stores are the most needed commercial service in the area" (Livable Centers Study 2001).

Interestingly, the community groups that were successful at negotiating supermarket locations in their neighborhood were in northern counties. Residents in these areas did not want supermarkets, and their associated traffic, to spoil the tranquility of their neighborhoods. These residents readily mobilized, often through well-established homeowner associations. When Publix first announced its plans to build a store in Cobb County, in 1991, "homeowners organized to fight the plan they [said] would open the door to commercialization along the two-lane road" that bordered the proposed site (Alexander 1991: 18). Blanche Mullaney, a resident, explained her opposition, "those of us who chose to live in West Cobb are used to not having a grocery store within a couple of miles…that's why we moved here…we'd rather drive than have the lights shinning in our bedroom windows" (Alexander 1991: 18). Residents in Cherokee County resisted plans for a shopping center anchored by Publix and threatened to sue the company or the

county if a permit was issued (Ranking and Walker 1992: 1; Emling 1992: 1). Similarly, members of the Dunwoody Homeowner's Association (approximately 2,000 members) organized a successful resistance to Publix's plans to build a flagship store in their neighborhood (Blake 1992: 1). In 1995, Coweta County rejected a rezoning proposal that would have allowed the development of a Publix anchored shopping center. The main concerns voiced by residents "were increased traffic and potential runoff problems" (Snow 1995: 10M).

Taken together, these examples of successful attempts by these homeowner associations to stall or prevent supermarkets from developing in their neighborhood calls into question the role that home ownership has in political efficacy. These homeowner associations were better able to take advantage of political opportunities to shape their neighborhood food environments in their interests.

Like residents of low-income neighborhoods, national advocacy groups also had little influence to redirect supermarkets to the communities that needed them. Community groups and advocacy organizations openly critiqued the strategy for its openly discriminatory practices (Loupe 1992: 1). Civil rights groups like the National Association for the Advancement of Colored People (NAACP), the Southern Christian Leadership Conference (SCLC), and labor unions called on Publix to open more stores in minority areas (Emling 1993: 5). Specifically, these groups also criticized Publix for "targeting affluent Northside suburbs" and for "avoid[ing] black and Hispanic neighborhood's in other cities" (Murray 1992c: 1). In addition, the Florida Consumers Federation surveyed Publix management and found that "women held less than two percent of store manager and assistant manager positions, while blacks held less than

three percent and Hispanics less than four percent" (Murray 1992c: 1). There were also efforts by union groups, consumer advocates, and civil rights groups to combine the concerns of Publix's location strategy and their dismal diversity record. For example, the United Food and Commercial Workers Union held a joint press conference with SCLC to criticize Publix for not promoting minorities and for building stores in non-minority neighborhoods. For its part, Publix had no response to the claims it skipped over non-white neighborhoods, but it did acknowledge it had an employee diversity problem saying, "we do not have as many women and blacks in management as we would like, but we have been working for a number of years to change that" (Murray 1992c: 3).

Conclusion

There are four main insights and implications that these findings have for understanding how market actors, state actors, and community-based groups influence the development of supermarkets across the City of Atlanta. First, this analysis provides greater insight into the role of various market actors, namely developers and supermarket chains, in closing the rent gap. In both phases of supermarket development, in the suburbs and in downtown, developers made decisions based on the speculation that profit could be made from a different land use. Publix supermarkets developed a strategy to locate the first wave of stores in Atlanta's northern suburbs. For many of these initial stores, new buildings were constructed on un-developed land (prompting some residents to protest what they saw as the destruction of their isolated environment). In this way, capital, in the form of supermarket chains, continued to build new stores, the majority of which were in predominantly white northern suburbs.

Importantly, the decision was based on market trends and a demographic analysis of household income. That is to say, that there is no data to support the assertion that the market actors in this story were making these decisions based solely on race. In fact, Publix's decision to build a store in the upper and middle-income neighborhood of Cascade Heights is one example that would refute this conclusion. Instead, these market-based decisions to close the rent gap and build stores in the northern suburbs were decisions that, because of Atlanta's history with racial residential segregation, have racial implications. The consequences of this market calculation occurred within the historical legacies of racism and classism. The market and race, in Atlanta's context, cannot be separated; these dynamics are intricately linked.

The divergent experiences of Pittsburgh and the Old Fourth Ward highlight how the size of the rent gap, that is the expected profit a developer may make from another land use, is heavily influenced by the extent to which racial segregation and the concentration of poverty exist in the neighborhood. The greater the concentration of poverty and racial segregation a neighborhood experiences, the bigger the rent gap and the less likely it is for a developer to redevelop a neighborhood with new residential and retail uses. In the Old Fourth Ward, the concentration of black residents and the concentration of poverty decreased from 1980 to 2010. In contrast, Pittsburgh experienced an increase in the concentration of black residents and the concentration of poverty during the same time period. While both neighborhoods began with similar demographic and economic characteristics in 1980, they experienced development differently. The Old Fourth Ward redevelopment plans disproportionately contain references to strategies for redevelopment, while Pittsburgh's redevelopment plans

contain comparatively more analysis of the barriers and challenges to redevelopment initiatives. Additionally, the neighborhoods surrounding the Old Fourth Ward became more racially mixed, while Pittsburgh and the rest of southwest Atlanta remained predominantly black from 1980 to 2010 (see Figures 5 and 6). Therefore, part of the reason that the Old Fourth Ward escaped food designation by 2010 was not that it built supermarkets in the neighborhood – in fact, no supermarkets actually exist in the neighborhood's boundaries. Rather, the Old Fourth Ward experienced a set of demographic and economic shifts – namely a decrease in the concentration of black residents and a decrease in poverty – that Pittsburgh simply did not. These demographic and economic shifts closed the neighborhood's rent gap, led to the development of mixed-use residential and retail development, and ultimately sustained a growing population and consumer base that maintained the supermarket stores nearby.

Secondly, the market actors that closed Atlanta's rent gap in the suburbs and in downtown neighborhoods used two different strategies of development. In the suburbs during the 1990s, supermarket chains and developers bridged the rent gap by building new stores in the northern suburbs or by buying out old chains and redeveloping old storefronts. By the turn of the century, supermarkets and developers were relying on participation from the state to encourage new residential development downtown and to displace poor residents. The state, acting in its own interests to increase property value, boost tax revenue, and reduce crime – razed all of Atlanta's public housing and championed tax allocation districts and urban enterprise zones to fund new development projects. In many ways, the state stood primed and ready to partner with developers to realize this development. Even though no supermarkets were built in either Pittsburgh or

the Old Fourth Ward, other examples do exist in Atlanta that better explicate this process (in the East Lake neighborhood, for example). Overall, the market actors had merged with the interests of the state by the time developers looked to close the rent gap downtown.

This leads to the third and final conclusion. Demographic and economic shifts, as well as market instability, led Pittsburgh to further food vulnerability and ultimately to food desert status by 2010. In terms of the demographic and economic shifts, the concentration of poverty and racial segregation in Pittsburgh increased residents' food vulnerability by eroding the consumer and population base that smaller grocery stores depended on. As noted earlier, Pittsburgh experienced significant population loss, increased racial segregation and further concentration of poverty from 1980 to 2010. These factors combined, as Massey (1990) has argued, further concentrated poverty in Pittsburgh and eroded the commercial and retail vitality of the neighborhood. Therefore, grocery stores such as A&P, Big Star Foods, and Winn-Dixie were operating in a neighborhood that was less able to provide a consistent and sustainable consumer base. It is likely that these stores closed because of these demographic and economic shifts.

To be sure, market instability also played a part in how the Old Fourth Ward and Pittsburgh experienced food vulnerability. Publix's entry into Atlanta's grocery market produced instability in what was, for the most part, a fairly stable supermarket landscape. As the supermarket war intensified across metro Atlanta, and both Publix and Kroger added stores to the north of the city, smaller chains and independents closed their doors and less profitable stores in Kroger's inventory were also closed. This was the case in Pittsburgh when it experienced the closure of an A&P store, a Winn-Dixie, and a Big Star

Foods store. The Old Fourth Ward was able to escape the same fate of Pittsburgh because the Kroger on Ponce de Leon Avenue remained open and because Publix bought out the A&P on Ponce de Leon Avenue and was also an anchor tenant in a mixed-use development project on North Avenue and Piedmont Avenue.

The importance of the closure of these independent and small chains cannot be understated. For years, these stores operated successfully in Atlanta's market, serving communities in south and southwest Atlanta, and this was the landscape throughout the 1980s. When Publix announced its move to Atlanta, however, that signaled the end for the stores who could no longer compete with large supermarket chains. Therefore, Atlanta's food desert story is as much about where older stores close down as it is about where new stores open up. The closure of these smaller stores were partly a function of the racial segregation and concentration of poverty that these neighborhoods experienced and ultimately made these neighborhoods more vulnerable to food insecurity.

Third, the analysis in this chapter emphasizes the need for the conceptual tool of 'food deserted' that can capture the ways that supermarkets bypass some neighborhoods while investing in others. This process is dynamic, as we have seen in Atlanta, and investigating the processes in which some neighborhoods are deserted by supermarkets and investment capital is an important element of the larger story. The term 'food deserted' is also able to capture how state actors and market actors set the policy context that influences which communities will experience redevelopment and investment. As the redevelopment plans analyzed in this chapter show, even though no supermarkets are explicitly identified in a plan or project, the plans themselves are repositories of the strategies that both state and market actors will use to implement the redevelopment

vision. In short, the plans provide a template for how state and market actors will facilitate the development of neighborhoods, which will likely influence the speculation of supermarket actors to locate in that neighborhood. The term 'food deserted' also captures the efforts of those residents who have continually called for neighborhood retail. Residents in Pittsburgh have documented their needs for neighborhood retail in several redevelopment plans over the past two decades, to no avail. These are the true deserted in the story. Redevelopment plans that forwarded mixed income development that will likely displace these residents will only move the problem of food deserted residents to another location and will not solve the fundamental problem of racial segregation and food vulnerability.

Finally, the findings highlighted in this chapter further inform our understanding of the relationships identified in the quantitative analysis in a few key ways. The geo-spatial analysis displayed how supermarkets moved to the northern areas of the city over the study period. The choropleth maps illustrate that within the context of Atlanta's racial segregation and concentration of poverty in the south and southwest neighborhoods, this movement had the consequence of leaving predominantly poor and black neighborhoods with limited proximity to supermarkets. The statistically significant clusters of high counts of supermarkets that are illustrated in Figure 10 and Figure 11 further explain that this movement is not random but rather part of a larger pattern. That pattern, in part, is explained by Publix's entry into the Atlanta market in 1992 and the chain's calculated decision to locate in higher income neighborhoods in northern Atlanta and in the northern suburbs. To compete, other major chains followed a similar location strategy. In contrast, smaller and independent stores, located in predominantly black and poor neighborhoods

to the south, were unable to remain open. In sum, the analysis of Atlanta's supermarket landscape and market competition clarifies how locational strategies were an important element of Atlanta's "supermarket wars" and partly responsible for shifting supermarkets to the northern areas.

The quantitative findings also highlighted the importance of population density and percent unemployed in increasing the odds that a low-income census tract would be designated as a food desert. While the qualitative analysis presented here bears out the importance of population density in Atlanta's food desert story, understanding the role of percent unemployed is less clear and highlights the need for further study. The role of percent black (as a measure of racial segregation) was not significant in the logistic regression models but in this qualitative analysis comparing Pittsburgh and the Old Fourth Ward, the racial makeup of the neighborhood is one of the key measures distinguishing the two case study neighborhoods. To illustrate this, Pittsburgh's concentration of black residents maintained well above 90 percent between 1980 and 2010. In contrast, the Old Fourth Ward went from having 95 percent black residents to 56 percent. When this is understood from the perspective of Massey's (1990) assertion that blacks experience poverty at a greater rate, and because of that even a marginal decrease in racial segregation is likely to decrease poverty, we can see that neighborhoods that successfully integrate whites may have a greater chance of urban redevelopment and renewal. Put more simply, the extent to which a neighborhood experiences redevelopment and capital investment – including the building of supermarkets – is directly connected to the extent that whites take residence in that neighborhood. This is because whites experience poverty at a lesser rate than blacks and therefore produce

lower risk investments for capital. Future studies on food vulnerability and race should take care to investigate this relationship further.

CHAPTER 6

CONCLUSION

The analysis contained in this project sought to better understand the development of food deserts in Atlanta from 1980 to 2010, using supermarkets as a proxy for food access. In doing so, I first explained the key demographic and economic factors that are influential in the process of locating supermarkets across Atlanta during this thirty-year study period. In particular, I explained how racial segregation and the concentration of poverty create food vulnerable neighborhoods. I used two case study sites to understand how specific market actors, state actors, and community-based groups have influenced factors relating to racial segregation, the concentration of poverty, and food vulnerability. Overall, I have found that a constellation of factors interact in the production of a neighborhood's food environment, including the demographic and economic context and the interests of private and public actors. While this analysis permits me to point to some key issues supported by the data, it does not support a definitive cause and effect relationship between demographic variables and food desert development. Instead, this analysis, and the theoretical perspective and methods it relies upon, illuminates four key findings. Each of these is outlined below.

Race, Poverty, and Food Vulnerability: A Spatial Relationship

Racial segregation, the concentration of poverty, and population density spatially overlap with shifts in Atlanta's supermarket locations. Atlanta has a clear racial and income dividing line that splits the city into higher-income and majority white neighborhoods to the north and low-income and poor, majority-black, neighborhoods to

the south. For the most part, this dividing line has persisted and, in some areas, intensified between 1980 and 2010. From 1980 to 2010, the concentration of blacks to the southern parts of the city increased, alongside a corresponding increase in the concentration of whites to the north. This shift is also visible in population density. Neighborhoods in south Atlanta (for example, Pittsburgh) experienced a decrease in population density during this period, while neighborhoods to the north of the city and to the east of downtown (for example, the Old Fourth Ward) experienced an increase.

The concentration of poverty and extent of racial segregation reinforces the vulnerability experienced by low-income neighborhoods, including food vulnerability. True to Massey's (1990) analysis on racial segregation, the market shift that redistributed supermarkets to the north had two important consequences for vulnerable communities. First, throughout the 1980s and early 1990s, Atlanta's poor communities disproportionately experienced the combination of population loss and supermarket flight and were less able to absorb the shocks brought on by these changes. In relation to this, other symptoms of disinvestment and poverty – crime, residential and commercial vacancy, unemployment, drug abuse, etc. – also intensified. Certainly, these conditions are an indication of other processes and structures of inequality that this limited analysis can only suggest as important elements of this story.

The important point here is that the neighborhood of Pittsburgh (and others with similar characteristics) was less able to sustain what little economic vitality it did have and consequently suffered the loss of supermarkets that served as access points to fresh fruit and vegetables. Second, vulnerable communities such as Pittsburgh – by virtue of their disinvestment and steady decline – were less likely to experience redevelopment (as

evidenced in the analysis of neighborhood redevelopment plans). In economically vulnerable neighborhoods similar to Pittsburgh that have lost a significant population since 1980, commercial revitalization is made particularly challenging and virtually inconceivable without outside capital and state support to fuel new residential development. Therefore, closing the rent gap in Pittsburgh would require the state and market actors to act in concert in order to create less-risk for their investment. When development projects are considered, the strategies that attempt to increase residential population are intertwined with market interests. While these market-based strategies may make great economic sense in a market-economy, they have the effect of prioritizing the development of market-rate residential development, which prices out and displaces low-income and poor incumbent residents.

These demographic shifts are correlated with changes in supermarket locations. This is especially evident in the early 1990s when Publix entered Atlanta's grocery market and began to build new stores in the northern suburbs. The strategy of Publix Supermarkets, according to industry analysts, was to maximize the buying power of high earning majority white residents. Other stores followed suit, making the same demographic and economic calculations as Publix and locating their stores in the suburbs. This market competition persisted across metro Atlanta and resulted in neighborhoods to the north of the city acquiring greater access to food.

At the same time, however, changes in the market interacted with demographic shifts in racially segregated neighborhoods like Pittsburgh and ultimately created unfavorable conditions for supermarkets. From 1980 to 2010, Pittsburgh experienced an increase in percent black and in residents living in poverty. Additionally, the

neighborhood lost population density overall. These conditions made it difficult for smaller chains and independent stores, many of which were located near downtown neighborhoods, to remain competitive and eventually they closed their stores. As a result, by 2010 the supermarket landscape looked drastically different than the one witnessed in 1980. Whereas stores like Piggly Wiggly, Winn-Dixie, Big Star and A&P had populated neighborhoods in south Atlanta in 1980, by 2010 the majority of tracts in south Atlanta were food deserts. Alternatively, many of the supermarket locations in 2010 were spatially skewed to the north. This trend echoes the analysis outlined by Massey (1990), who stresses that racial segregation further concentrates poverty and makes it difficult for neighborhood retail – and other services – to thrive.

Population density is a key variable in this change over time. The logit regression that modeled the relationship between variables and the probability that a census tract is a food desert an increase in population density lowered the odds that a tract would be designated as a food desert. In many ways, population density weaves through all the constellation of factors and contexts of Atlanta's food deserts. Fundamentally, decrease in population density signifies a loss of a stable tax base from which the city can support schools, infrastructure, and public resources. Additionally, a variety of commercial and retail uses, including supermarket chains, factor in population density to inform their location strategies. Often, supermarkets rely on the consumer draw of other retail establishments to increase their consumer base. Population density, therefore, is a key component of the story, but the other elements of this research help us understand that its usefulness is less about the sheer numbers of people living in a neighborhood, but more so about *who* those people are and their associated race and class demographics.

What separates the Old Fourth Ward from Pittsburgh is that the former was resilient enough to sustain a major supermarket since 1980. While this research cannot explain why this is so or what variables increase 'resilience,' it may likely be the neighborhood's proximity to high-income neighborhoods to the north and east – factors that protect Old Fourth Ward from extreme racial and economic segregation. Pittsburgh, however, is a vulnerable community in the midst of other vulnerable communities, a majority poor and black neighborhood in the midst of other majority poor and black neighborhoods. Racial segregation, therefore, is one factor influencing the food vulnerability of Atlanta's neighborhoods. According to the thesis put forth by Massey (1990), this high concentration of poverty and racial segregation creates the conditions where Pittsburgh is more vulnerable to economic dislocation and less capable of 'bouncing back' from economic downturns. The loss of supermarkets, other retail establishments, and residential population are both symptoms and contributing factors that exacerbated Pittsburgh's vulnerability. The analysis here can only describe some of the processes and actors that are part of this story. Further research is needed to delineate the extent to which racial segregation and poverty have a role in Pittsburgh's story of economic disrepair and the production of food vulnerabilities.

Market Actors: A Strong Influence in Neighborhood Redevelopment

The experience of the Old Fourth Ward in dispersing racial segregation and the concentration of poverty, and thereby evading food desert status must also be placed in the context of Smith's (1987) analysis on the rent gap, gentrification, and displacement. The divergent experiences of Pittsburgh and the Old Fourth Ward highlight how the size of the rent gap is shaped by the extent to which racial segregation and the concentration

of poverty exist in the neighborhood. Gentrification is about migration – the movement of people – into central-city locations (London et al. 1986; Aoki 1993). Based on the newspaper accounts of redevelopment in the Old Fourth Ward and the redevelopment plans analyzed in the preceding chapter, the strategies for redevelopment in the neighborhood centered around bringing in new residents to the neighborhood. Additionally, the data on demographic changes in the Old Fourth Ward indicate that new residents are largely high-earning and non-black individuals (Smith 1987; Griffin 1996). This is evident in the growth of population density in the neighborhood and the related decrease in percent black and poverty rate. Therefore, the experiences of Pittsburgh and the Old Fourth Ward demonstrate how the concentration of poverty and racial segregation a neighborhood influences the size of the rent gap. As the analysis of redevelopment plans highlights, poverty and the concentration of black residents make it less likely for a developer to redevelop a neighborhood with new residential and retail uses.

This insight into the relationship between racial segregation, the concentration of poverty, and closing the rent gap allows us to understand how structures of inequality and the circulation of capital shape food access. As Neil Smith (1987) and David Harvey (1985) suggest, gentrification is just one local occurrence of a process of urban metabolism structured by the rules of capitalism. Investors and developers make calculated decisions to close the rent gap in the inner city by redeveloping old buildings and or developing on vacant land in order to avert crises of accumulation. Mixed-use residential and commercial development has been a strategy used by capital to close the rent gap in the Old Fourth Ward and to restructure the built environment in order to make

a profit. One notable example of this process is the conversion of the Rio Mall into a retail strip anchored by a supermarket and market-rate apartments.

Pittsburgh and the Old Fourth Ward have also experienced the circulation of capital differently. While the Old Fourth Ward has experienced several 'spatial fix' practices that have brought new luxury condos to the area, most recently spurred by the redevelopment of an old rail line as green space. In this analysis, these spatial fixes have come primarily in the form of residential development and mixed-use development (for example, the destruction of the Rio Mall and the mixed-use development of apartments and retail shops). In contrast, Pittsburgh has been bypassed by capital. Although the Pittsburgh Community Development Corporation and others have produced redevelopment plans, these visions have remained largely unfulfilled due to the inability to find capital investment.

In this analysis, it is clear that the circulation of capital is indicative of a number of factors. First, the investment of capital in redevelopment projects was followed by further capital investment and redevelopment in the Old Fourth Ward. Capitalists have turned to the second sphere of capital to generate profit by redeveloping the Old Fourth Ward, often following each other. It seems as though the initial infusion of capital may be a risky venture, but once that risk is lowered by the success of pioneer projects, subsequent capital investment is to follow. Second, and related to the question of gentrification, these new market-rate residential developments ensure that poor, and often black, residents will be pushed out.

The experience of the Old Fourth Ward and Pittsburgh also highlight how the type and location of food retail options, as Bedore (2013) argues, are the result of the

movement of capital. In the case of Atlanta, we see the consolidation of the supermarket industry and food retailing most clearly during the period after 1992 when Publix entered the market. The consolidation of the food retailing industry limited the number of stores available to purchase food and produce. The limited options that do exist have become increasingly patterned by the inequalities that exist within the market. Fewer supermarket chains exist in Atlanta in 2010 than in 1980 and those remained were dispersed unevenly across the city along lines of race and class inequality. For example, Pittsburgh's loss of smaller independent chains was partly the result of industry consolidation and partly the consequence of the neighborhood experiencing a significant loss of population, concentration of poverty, and further racial segregation. On the whole, the result is fewer food retail stores existed, period, and the locations of those stores mapped onto existing geo-spatial race and class inequalities.

The construction of supermarkets across Atlanta was also about the active creation of desirable consumers. Publix's northern suburban strategy was a clear attempt to build and demarcate a group of consumers with high incomes who could purchase their goods. As a result, Publix and other supermarkets across Atlanta were actively engaged in the process of developing not only built retail environments, but also retail cultures. In this way, supermarkets became social engineers and urban planners. This highlights that supermarkets are not pure market actors but are also deeply interested in the demographic and economic makeup of communities and have a stake in maintaining and shaping how these factors are geographically dispersed throughout the city.

Community Groups: Limited Power in Shaping Supermarket Development

One glaring conclusion stemming from this analysis is concerned with what was not found. Not one supermarket was built in the case study sites because it was planned for in a neighborhood redevelopment plan. The Old Fourth Ward obtained two new supermarkets throughout the study period – both are Publix stores – because of market factors. For one location, A&P sold its store to Publix when the chain decided to close all locations in Atlanta. The other location, developed on the previous Rio Mall site, was a project driven primarily by developers who envisioned a retail complex accompanied by market-rate residential units. While Pittsburgh residents certainly lodged their concerns about the lack of grocery store options in NPU minutes and several redevelopment plans, these concerns did not lead to the development of a supermarket in the area. This demonstrates two things: (1) that redevelopment plans serve as repositories of community concerns and (2), that the plans alone do not have the power to accomplish their vision. Plans need investors and financing, city council approval and adoption, and they need developers and partners. As such, it would seem that successful plans would have to be in alignment with the interests and perspectives of the cast of actors needed to make it a reality. For Pittsburgh in particular, further research is needed to understand why these plans failed to materialize.

Neighborhood redevelopment initiatives that aim to reinvigorate communities and spur economic growth under the public-private and mixed-use model – in short, to close the rent gap – may end up displacing the very communities they are trying to revive. The Pittsburgh and Old Fourth Ward redevelopment plans share a commitment to infusing the neighborhood with market-rate housing units – or what supermarkets read as potential

consumers – and interspersing this use with retail shops. The majority of Pittsburgh's residents, however, would not be able to afford these units. Therein lies the conundrum of using economic development to spur supermarket access to fix food deserts; the 'fix' often involves market-based strategies that rely on a residential base that these communities do not start with. Therefore, the fix is embedded in the built environment – the neighborhood may have a physical supermarket, but the community residents that once occupied that neighborhood are faced with the threat of displacement. Vulnerability does not get 'fixed,' it gets displaced, moved around to other parts of the city. In the context of racial segregation and vulnerable communities, food deserts get relocated, not solved.

Additionally, the structures of opportunity for community-based groups to shape the direction and plans for neighborhood redevelopment are very limited and are further shaped by race and class. For example, communities in Atlanta's northern suburbs continually resisted the encroachment of Publix supermarkets being developed in their neighborhoods. Residents organized as homeowners and actively resisted the actions of county planning boards and zoning decisions. In stark contrast, Pittsburgh residents consistently advocated for supermarkets to be built in their neighborhood and lodged these desires in Neighborhood Planning Unit discussions and redevelopment plans. However, their advocacy was unsuccessful.

These two sets of experiences shed light on how race and poverty influence the opportunities that community groups have to shape development in their neighborhood. Pittsburgh, because of a steady loss of population and a concentration of poverty over time, does not have the luxury of debating what development looks like (like the

residents in northern counties have). To the contrary, community groups and community development corporations have tried to entice and encourage development and have had little opportunity to resist or debate specific types of retail stores in the neighborhood. In sum, the political opportunity structure for Pittsburgh residents to shape redevelopment initiatives is small in part because developers have expressed little interest in closing the rent gap and initiating development projects.

The limited capacity of Pittsburgh residents to shape their food landscape is starkly contrasted with the efforts of suburban homeowner associations who were largely successful in preventing supermarkets from disrupting their serene neighborhoods. Residents in these northern suburbs were decidedly better politically positioned to negotiate the neighborhood food environment. It is beyond the scope of this research to fully understand why these divergent experiences exist, but it is worth noting that not everyone has the same capacity and power to shape and decide the environment they live in. For Pittsburgh, their power was severely limited. This analysis points to one plausible reason: developers were not interested in Pittsburgh. The circulation of capital never reached Pittsburgh during the study period (with perhaps one slight exception for the nearby Olympic stadium development). The disinterest in Pittsburgh as a site of development made the neighborhood a non-issue, allowing many of the resident's concerns to pass without notice. In contrast, residents of neighborhoods where development *was* happening, like in Atlanta's northern suburbs, were successful in engaging and shaping how development looked in their communities.

Atlanta's Food Deserts: A Problem of Systemic Inequality

These conclusions fundamentally problematize how the food desert literature has conceived of the problem and opens the door to a more complex understanding of neighborhood food security and vulnerability. If vulnerability – as an assessment of neighborhood disinvestment, poverty, and racial segregation – is such an integral part of how communities experience food security, then what does that mean for how we assess and address food deserts? Part of what this analysis demonstrates is that any understanding of food access issues that does not address deeply historical factors of racism, poverty, and structural inequality is woefully inadequate. Without a theoretical and methodological commitment to address these elements, food deserts may be presented erroneously as a contemporary problem of not enough supermarkets. If we add more supermarkets, we can likely solve the problem. Yet, as this analysis has shown, the processes and development of food deserts is not this simple. Instead, food deserts are a contemporary manifestation of structural inequalities and racial segregation that have historical roots. The problem, at its core, is not a lack of supermarkets *per se*, but the social and economic inequalities that disproportionately locate those supermarkets in high-earning majority white neighborhoods, while simultaneously eroding the capacity for poor and majority black neighborhoods in Atlanta to readily and consistently access fresh produce. To be sure, vulnerable neighborhoods experience a loss of neighborhood retail overall including pharmacies, coffee shops, restaurants, and book stores. Seen in this way, adding more supermarkets will likely not solve the problem but will instead follow the same pattern of uneven resource distribution across Atlanta. The food desert

concept, therefore, is useful in that it helps us measure and quantify one aspect of food insecurity, but it does not tell the whole story.

Instead, this analysis suggests that while the criteria for food deserts is useful for quantifying one aspect of the problem for purposes of comparison, another conceptual tool is required. The conceptual tool that this analysis supports is one that is able to focus on the people, not necessarily the physical place or built environment or neighborhood. This is important, because as we have seen, capital flows through urban space closing rent gaps by redeveloping land with residential units and retail uses, including supermarkets. While the physical neighborhood may receive a new supermarket, this process is often accompanied by development priorities and strategies that displace poor and vulnerable people and communities. Where do those people go, and can we say the food desert problem is solved if the physical neighborhood now has access to food but the people who once lived there likely still do not? As you can see, limiting the concept of food desert to place and the built environment – and the redevelopment initiatives induced by capital – masks this important consideration.

The findings outlined in this dissertation also fundamentally problematize the core concept underlying food deserts: the obesogenic thesis. This thesis argues that the built environment determines your health and weight. The food desert concept is used to critique the built environment for its lack of supermarkets and for the related increase in obese bodies. Using this frame, Pittsburgh is seen as an obesogenic environment that is inundated with fast food chains and convenience stores. On the other hand, the Old Fourth Ward is seen as a leptogenic environment – one that promotes leanness – for its access to supermarkets located nearby. The problem is that our collective gaze has

critiqued the presence of food deserts, and the black unhealthy bodies it produces, without much thought given to the structures of inequality that those built environments are situated within.

This analysis has shown that the built environment itself is a product of systems of inequality that segregate race and concentrate poverty. Additionally, this analysis also shows that market actors, the state, and community groups negotiate these environments, each with varying degrees of success. The point is simply this: the problem is not that obesogenic environments exist; the problem lies more deeply beneath the surface. The real problem with these so-called obesogenic environments is that they are created through processes of structurally entrenched inequities that raise the odds that those unhealthy bodies will be black and poor. The real paradox is that it is quite likely that if Pittsburgh ever did 'fix' its obesogenic environment – that is, get a supermarket, fix sidewalks, add parks and spruce up streetscapes – it would not be for those residents that currently live there.

This analysis also highlights the futility of market-based solutions to the food access problem. Supermarkets are market actors that cannot feasibly subsidize non-profit generating ventures in poor and racially segregated neighborhoods. The private sector is fundamentally unable to solve the economic and social problems of racial segregation and poverty. The rules of the market make it difficult to develop a self-sustaining supermarket in a high-poverty and highly racially segregated neighborhood like Pittsburgh. Even with significant financial backing from the state, projects such as these are tenuous at best. Therefore, it is likely more helpful for initiatives to secure food

security for poor and racially segregated neighborhoods also be coupled with policies that dismantle structures of social and economic inequity.

Food vulnerability is not so much tied to the place, but to the people. In other words, the underlying problem is not the presence or absence of food deserts. Instead, it is the processes and structures that have produced whole communities of people that have been *food deserted*. This is what we see if we look at structural inequalities of racism and capitalism – because those people and the identities they hold exist within structures that make it extremely difficult to live in food secure neighborhoods. As those people are displaced, their position in the social and economic structures of our society – and food vulnerability -- goes with them.

The conceptual tool of "food deserted" is useful for three key reasons. First, it provides room for food vulnerability to focus on the people who experience it and allows for us to analyze who experiences it consistently and chronically. As stated above, this opening takes food desert out of the built environment and includes the people who live in disinvested neighborhoods. Second, the verb "deserted" indicates an actor and an action and allows us to investigate what conditions, decision points, and players give rise to food vulnerable areas and people. Additionally, it allows us to consider the movement and flow of capital in the urban environment and the rules and values it follows in the process of investing in some communities while deserting others. Finally, thinking about those who are food deserted helps us step back from the narrow thinking that sees the solution as more supermarkets. If Atlanta has communities of people that have been systematically food deserted, more supermarkets will not address the core issue. The allocation of supermarkets, as we have seen, is a symptom of other factors. Those other

factors, racism and poverty and the structural systems that keep them in place, are what need to be remedied. Therefore, with the concept of food deserted we can understand that Atlanta does indeed have a food desert problem, but it also has a race problem. Or, put more accurately, Atlanta has a food desert problem *because* it has a race problem that systematically produces food vulnerable communities.

Implications for Future Studies

There are three directions that future studies can take to build upon the analysis presented here. First, future studies can use the theoretical framework outlined in this study to understand how market actors, state actors, and community-groups negotiate the development of food deserts and food deserted communities in other neighborhoods in Atlanta and in other cities across the country. Doing so will allow us to understand how much of the processes analyzed here is similar or different to what occurs in other settings and regions. Ultimately, it will help illuminate whether the analysis I presented here for Atlanta is unique or part of a larger pattern seen across various cases.

The second direction future studies can take is providing a more detailed analysis of one set of actors. Admittedly, this research has only scratched the surface of the interests and characteristics of different actors and more information is needed on how various actors function, what influences their decisions, and how they form coalitions with other actors. In particular, more analysis is needed on the role of public-private partnerships and how they function in the development of food deserts. Additionally, future studies can also provide further analysis on the ways in which public policy facilitates or restrains the development of food deserts. Policies such as zoning, land use

designation, public-funding streams, and tax codes could provide useful information and insight.

The final direction that future studies can extend this analysis into is community actors. Specifically, future studies can step away from using supermarkets as a proxy for food access and work to understand how other sites of food distribution like community gardens, community supported agriculture, municipal markets, farmers markets, food pantries, and soup kitchens, etc., help communities negotiate food vulnerability. In particular, I think understanding how communities remain resilient in the face of systematic disinvestment can prove useful in understanding alternative systems of food security. These systems may likely provide better solutions to food vulnerability than relying on the influx of supermarket chains. Additionally, these studies can expand our understanding of how communities experience food vulnerability and provide insight into how they resist, negotiate, and change that experience.

In closing, this research project set out to understand how Atlanta's food deserts developed across Atlanta from 1980 to 2010 and found that supermarkets disinvested from majority black and poor neighborhoods south of Atlanta while simultaneously saturating the predominantly white and high-income areas north of the city. Although various actors play a role in this development, the market in particular sets the context for how developers, supermarkets, state and local agencies, as well as community groups influence and shape the process. As we have seen, however, not all actors influence the development of food deserts equally. Ultimately, this analysis has demonstrated that the concept of food desert, although useful for quantifying and comparing built environments, is limited and that an expanded concept is needed. The concept of food

deserted permits us to place communities and people that are food deserted, and the systems and structures that undergird that vulnerability, at the center of the analysis. Through this lens, it is my hope that future studies can critically engage food deserts (as place) and the food deserted (as people), in order to illuminate paths to sustainable solutions to food vulnerability.

APPENDIX A: SUPERMARKET LOCATIONS

1981 SUPERMARKET LOCATIONS	
COMPANY NAME	STREET ADDRESS
A & P FOOD STORE	3131 CAMPBELLTON RD SW
A & P FOOD STORE	2365 PEACHTREE RD NE
A & P FOOD STORE	850 OAK ST SW
A & P FOOD STORE	1250 WEST PACES FERRY RD NW
BIG H FOOD STORE	372 MORELAND AVE NE
BIG H FOOD STORE	1932 BOULEVARD DR NE
BIG H SUPER SAVINGS	1489 PYROR RD SW
BIG STAR FOOD STORE	2045 DONNELL LEE HOLLOWAY NW
BIG STAR FOOD STORE	1544 PIEDMONT AVE NE
BIG STAR FOOD STORE	2975 HEADLAND DR SW
BIG STAR FOOD STORE	1984 HOWELL MILL RD NW
BIG STAR FOOD STORE	2869 LAKEWOOD AVE SW
BIG STAR FOOD STORE	2275 MARIETTA DR SE
BIG STAR FOOD STORE	1599 MEMORIAL DR SE
BIG STAR FOOD STORE	4409 ROSWELL RD NE
BIG STAR FOOD STORE	2685 STEWART AVE SW
BIG STAR FOOD STORE	664 CLEBURNE TER NE
FOOD GIANT	3721 CAMPBELLTON RD SW
FOOD GIANT	230 CLEVELAND AVE SW
FOOD GIANT	3599 MARTIN L. KING JR DR NW
FOOD GIANT	1257 MORELAND AVE SE
FOOD GIANT	1402 NORTH HIGHLAND AVE NE
FOOD GIANT	2176 DONNELL LEE HOLLOWAY NW

APPENDIX A: 1981 SUPERMARKET LOCATIONS CONTINUED

FOOD GIANT	2625 PIEDMONT RD NE
KROGER	1554 N DECATUR RD NE
KROGER	2020 CAMPBELLTON RD SW
KROGER	590 CASCADE AVE SW
KROGER	1455 MORELAND AVE SE
KROGER	3435 MEMORIAL DR
KROGER	1544 PIEDMONT AVE
KROGER	3030 HEADLAND DR
KROGER	3330 PIEDMONT RD NE
KROGER	5567 MEMORIAL DRIVE
WINN-DIXIE	2860 JONESBORO RD SE
WINN-DIXIE	3050 MARTIN L. KING JR. DR SW
WINN-DIXIE	4465 CAMPBELLTON RD NW
WINN-DIXIE	2020 HOWELL MILL RD NW
WINN-DIXIE	2625 PIEDMONT RD NE
WINN-DIXIE	1901 STEWART AVE SW

2010 SUPERMARKET LOCATIONS	
COMPANY NAME	STREET ADDRESS
MORELAND SUPER VALUE FOODS	1257 MORELAND AVE SE
THE KROGER CO	1225 CAROLINE ST NE
PUBLIX SUPER MARKETS-INC.	825 MARTIN LUTHER KING JR
THE KROGER CO	3330 PIEDMONT RD NE # 16
PUBLIX SUPER MARKETS-INC.	1544 PIEDMONT AVE NE
PUBLIX SUPER MARKETS-INC.	3535 PEACHTREE RD NE C
PUBLIX SUPER MARKETS-INC.	2020 HOWELL MILL RD NW
THE KROGER CO	1745 PEACHTREE ST NW
THE KROGER CO	1715 HOWELL MILL RD NW
THE KROGER CO	1160 MORELAND AVE SE
THE KROGER CO	590 CASCADE AVE SW
PUBLIX SUPER MARKETS-INC.	6300 POWERS FERRY RD # 20
PUBLIX SUPER MARKETS-INC.	1250 W PACES FERRY RD NW
PUBLIX SUPER MARKETS-INC.	2900 PEACHTREE RD NW

APPENDIX A: 2010 SUPERMARKET LOCATIONS CONTINUED

THE KROGER CO	2205 LAVISTA RD NE
THE KROGER CO	3425 CASCADE RD SW # 104
PUBLIX SUPER MARKETS-INC.	2969 N DRUID HILLS RD NE
THE KROGER CO	725 PONCE DE LEON AVE NE
PUBLIX SUPER MARKETS-INC.	4279 RSWELL RD NE STE 300
THE KROGER CO	3030 HDLND DR SW 1300
PUBLIX SUPER MARKETS-INC.	950 W PEACHTREE ST NW
WAYFIELD FOODS- INC.	2532 BOULDERCREST RD SE
PUBLIX SUPER MARKETS-INC.	2325 CHSHIRE BRIDGE RD NE
PUBLIX SUPER MARKETS-INC.	2235 GLENWOOD AVE SE
PUBLIX SUPER MARKETS-INC.	1001 PONCE DE LEON AVE NE
PUBLIX SUPER MARKETS-INC.	2365 PEACHTREE RD NE
THE KROGER CO	2685 METRO PKWY SW STE A
PUBLIX SUPER MARKETS-INC.	1380 ATL DR NW STE 14135
PUBLIX SUPER MARKETS-INC.	3730 CARMIA DR SW STE 200
PUBLIX SUPER MARKETS-INC.	595 PIEDMONT AVE NE # 200
THE KROGER CO	1700 MONROE DR NE
THE KROGER CO	1799 BRIARCLIFF RD NE # 11
PUBLIX SUPER MARKETS-INC.	3695 CASCADE RD SW
WHOLE FOODS MARKET- INC.	650 PONCE DE LEON AVE NE # 400

APPENDIX B: CHI-SQUARED COMPUTATIONS FOR CODE COUNTS

	Observed values (O)				Expected Values (E)			Observed - Expected (O-E)			Chi-squared calculation by cell (O-E)^2/E	
	Pittsburgh	**Old Fourth Ward**	***Totals count***		**Pittsburgh**	**Old Fourth Ward**		**Pittsburgh**	**Old Fourth Ward**		**Pittsburgh**	**Old Fourth Ward**
Brownfields	3	0	*3*		1.340116279	1.659883721		1.659883721	-1.659883721		2.055951421	1.659883721
Commercial Conditions	7	3	*10*		4.467054264	5.532945736		2.532945736	-2.532945736		1.436251661	1.159565701
Community Actor	11	11	*22*		9.82751938	12.17248062		1.17248062	-1.17248062		0.139883805	0.112935962
Community Based Organization	2	0	*2*		0.893410853	1.106589147		1.106589147	-1.106589147		1.37063428	1.106589147
Neighborhood Association	3	1	*4*		1.786821705	2.213178295		1.213178295	-1.213178295		0.823698061	0.665017174
Neighborhood Planning Unit	4	4	*8*		3.573643411	4.426356589		0.426356589	-0.426356589		0.050866838	0.041067622
Community Gardens	0	3	*3*		1.340116279	1.659883721		-1.340116279	1.340116279		1.340116279	1.081950271
Demographic Characteristics	38	29	*67*		29.92926357	37.07073643		8.070736434	-8.070736434		2.176357813	1.757094486
Gentrification and Displacement	9	16	*25*		11.16763566	13.83236434		-2.167635659	2.167635659		0.420737611	0.339684831
Geographical Boundaries	1	24	*25*		11.16763566	13.83236434		-10.16763566	10.16763566		9.257180127	7.473835444
Government Actor	8	8	*16*		7.147286822	8.852713178		0.852713178	-0.852713178		0.101733676	0.082135245
Atlanta Board of Education	0	1	*1*		0.446705426	0.553294574		-0.446705426	0.446705426		0.446705426	0.360650009
City Council	3	3	*6*		2.680232558	3.319767442		0.319767442	-0.319767442		0.038150129	0.030800717
Federal	2	0	*2*		0.893410853	1.106589147		1.106589147	-1.106589147		1.37063428	1.106589147
Fulton County	0	0	*0*		0	0		0	0		0	0
HUD	1	2	*3*		1.340116279	1.659883721		-0.340116279	0.340116279		0.086320184	0.069691076
Mayor	1	1	*2*		0.893410853	1.106589147		0.106589147	-0.106589147		0.012716671	0.010266906
State of Georgia	2	0	*2*		0.893410853	1.106589147		1.106589147	-1.106589147		1.37063428	1.106589147

Government and Business Coalition	9	22	*31*		13.84786822	17.15213178		-4.847868217	4.847868217		1.697143985	1.370198559
Market Actor	14	6	*20*		8.934108527	11.06589147		5.065891473	-5.065891473		2.872503321	2.319131403
Community Development Corp	4	1	*5*		2.233527132	2.766472868		1.766472868	-1.766472868		1.397084616	1.127943972
Developer	0	7	*7*		3.126937984	3.873062016		-3.126937984	3.126937984		3.126937984	2.524550632
Industry	0	0	*0*		0	0		0	0		0	0
Investor	3	0	*3*		1.340116279	1.659883721		1.659883721	-1.659883721		2.05595142	1.659883721
Neighborhood Disinvestment	3	10	*13*		5.807170543	7.192829457		-2.807170543	2.807170543		1.356978652	1.095564201
Causes	5	6	*11*		4.91375969	6.08624031		0.08624031	-0.08624031		0.001513585	0.001222001
Descriptions/Characteristics	13	17	*30*		13.40116279	16.59883721		-0.401162791	0.401162791		0.012008778	0.009695353
Old Fourth Ward	0	1	*1*		0.446705426	0.553294574		-0.446705426	0.446705426		0.446705426	0.36065009
Pittsburgh	9	0	*9*		4.020348837	4.979651163		4.979651163	-4.979651163		6.16785426	4.979651163
Redevelopment	11	25	*36*		16.08139535	19.91860465		-5.081395349	5.081395349		1.605618053	1.296304593
Challenges to Redevelopment	40	30	*70*		31.26937984	38.73062016		8.730620155	-8.730620155		2.437647586	1.968048226
Commercial/Retail	58	63	*121*		54.05135659	66.94864341		3.948643411	-3.948643411		0.288462414	0.232891721
Grocery Retail	11	18	*29*		12.95445736	16.04554264		-1.954457364	1.954457364		0.294871756	0.238066339
Justifications/Reasons Given for Redevelopment	1	5	*6*		2.680232558	3.319767442		-1.680232558	1.680232558		1.053334451	0.850415428
Opposition to Redevelopment	0	0	*0*		0	0		0	0		0	0
Residential Development	49	43	*92*		41.09689922	50.90310078		7.903100775	-7.903100775		1.519798404	1.227017626
Strategies for Redevelopment	66	128	*194*		86.66085271	107.3391473		-20.66085271	20.66085271		4.92576315	3.976842053
Visions/hopes of redevelopment	26	37	*63*		28.14244186	34.85755814		-2.142441860	2.142441860		0.163100883	0.131680398
Relocation	5	4	*9*		4.020348837	4.979651163		0.979651163	-0.979651163		0.238714709	0.192727637
Residential Conditions	0	1	*1*		0.446705426	0.553294574		-0.446705426	0.446705426		0.446705426	0.36065009

Slum Designation and Clearance	6	8	*14*		6.25387 5969	7.74612 4031		- 0.25387 5969	0.25387 5969		0.01030 609	0.00832 0678
Supermarket	2	5	*7*		3.12693 7984	3.87306 2016		- 1.12693 7984	1.12693 7984		0.40614 4678	0.32790 3146
Kroger	0	4	*4*		1.78682 1705	2.21317 8295		- 1.78682 1705	1.78682 1705		1.78682 1705	1.44260 0361
Publix	0	1	*1*		0.44670 5426	0.55329 4574		- 0.44670 5426	0.44670 5426		0.44670 5426	0.36065 009
Whole Foods	0	0	*0*		0	0		0	0		0	0
Sustainability	0	4	*4*		1.78682 1705	2.21317 8295		- 1.78682 1705	1.78682 1705		1.78682 1705	1.44260 0361
Tax Allocation District	22	12	*34*		15.1879 845	18.8120 155		6.81201 5504	- 6.81201 5504		3.05528 0655	2.46669 7692
Championed by CBO	0	0	*0*		0	0		0	0		0	0
Championed by Developer/Investor	0	1	*1*		0.44670 5426	0.55329 4574		- 0.44670 5426	0.44670 5426		0.44670 5426	0.36065 009
Championed by Government	0	0	*0*		0	0		0	0		0	0
Urban Enterprise Zone	9	6	*15*		6.70058 1395	8.29941 8605		2.29941 8605	- 2.29941 8605		0.78908 4649	0.63707 1845
Championed by CBO	0	0	*0*		0	0		0	0		0	0
Championed by Developer/Investor	0	0	*0*		0	0		0	0		0	0
Championed by Government	0	0	*0*		0	0		0	0		0	0
Totals count	*461*	*571*	*1032*						*Sub-Totals*		63.3351 4183	51.1339 7616
											Chi-squared	**114.469 118**
											df	**53**

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